February 1983
Game No. 337



Parts and Operating Manual



Bally

MIDWAY MFG. CO.

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U.S.A.

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Form No. 0337-00300-0000

WARNING

THIS GAME MUST BE GROUNDED. FAILURE TO DO SO MAY RESULT IN DESTRUCTION TO ELECTRONIC COMPONENTS.

WARNING: This equipment generates. uses. and can radiate radio frequency energy and if not and used in accordance with the instructions manual. may cause interference to radio communications. It has been tested and found to comply with the limits for a CLASS A computing device pursuant to SUBPART J of PART 15 of FCC RULES. which are designed to provide reasonable protection against such interference when operated in a commerical environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

ELECTRICAL BULLETIN: FOR ALL APPARATUS COVERED BY THE CANADIAN STANDARDS ASSOCIATION (CSA) STANDARD C22.2 NO. 1, WHICH EMPLOYS A SUPPLY CORD TERMINATED WITH A POLARIZED 2-PRONG ATTACHMENT PLUG.

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

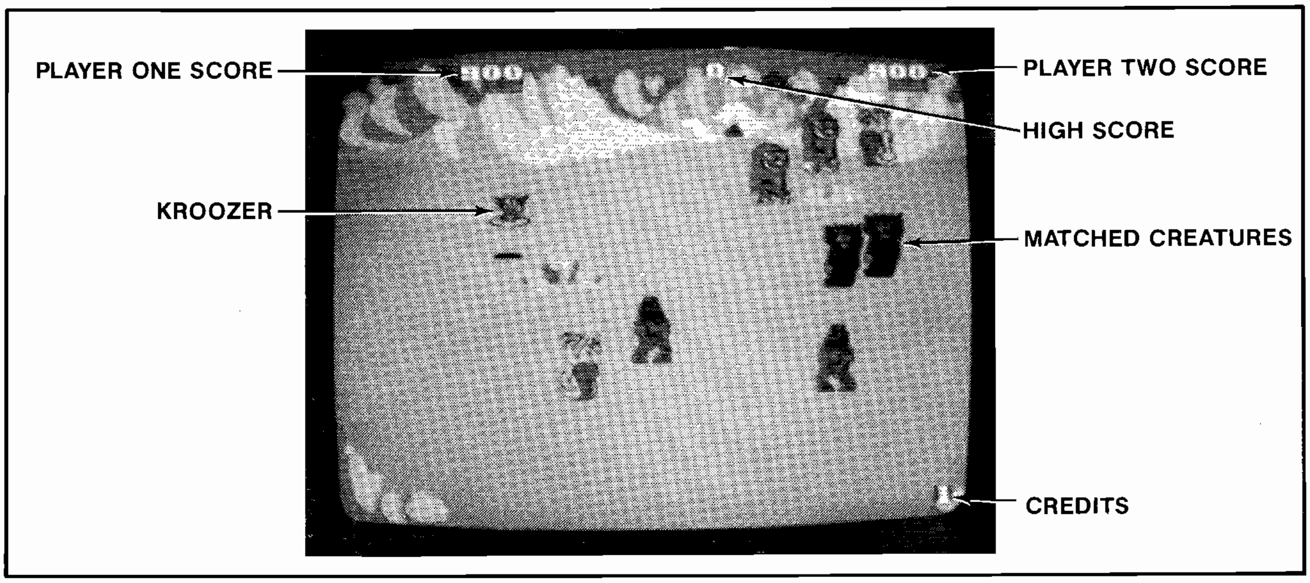
ATTENTION: POUR PREVENIR CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR. UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

Printed in U.S.A.

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Wacko

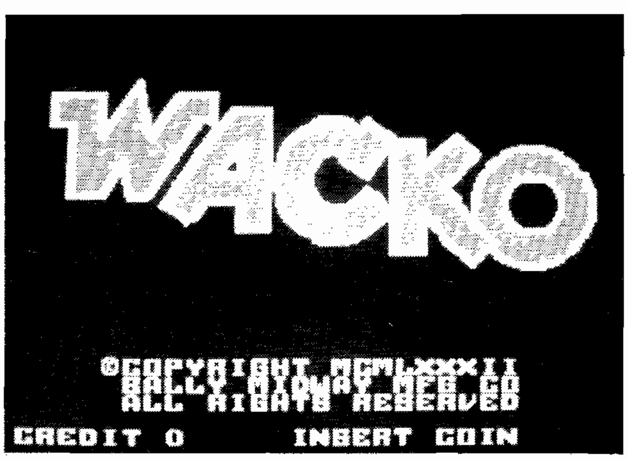
I. Game Operation



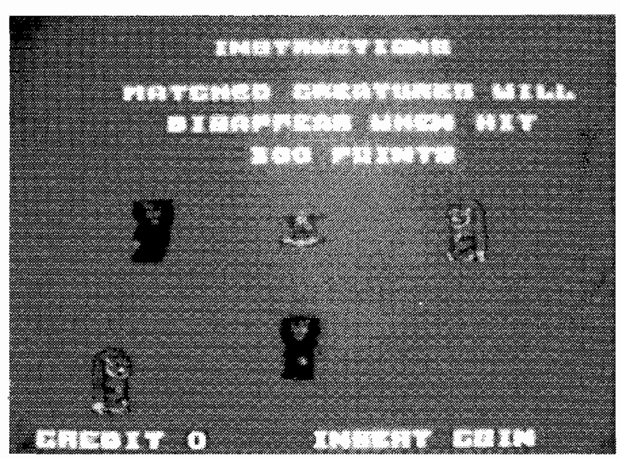
Identification of "On-Screen" Graphics During Play

ATTRACT MODE

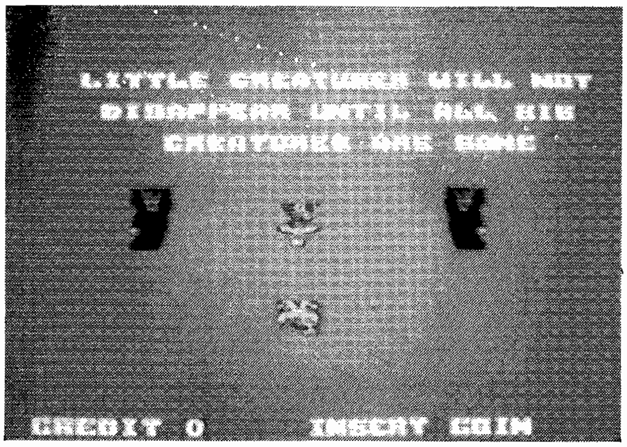
1. The Attract mode starts:
   - ☐ Just after power has been turned on to the game. (Self-Test switch is in the "OFF" position.)
   - ☐ After a Self-test has been completed and there are no more credits left in the game's memory.
   - ☐ After a play has been finished, the score was not high enough to put the game into the High Score/Initial mode, and there are no more credits left in the game's memory.
   - ☐ After the High Score/Initial mode when there are no more credits left in its memory.
   - ☐ In the Attract mode, the game will give the following displays **centered** on the monitor screen:



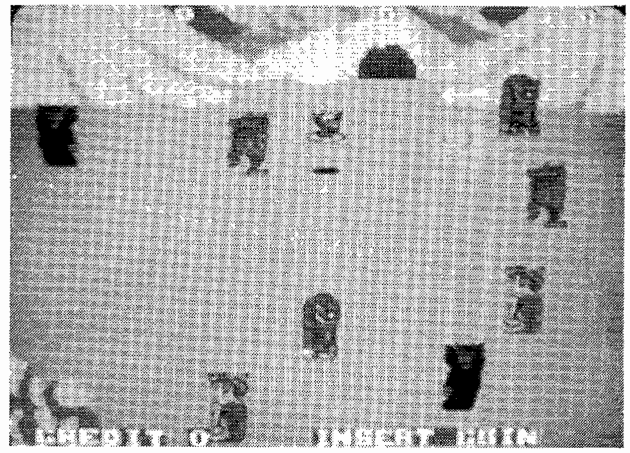
Attract Mode Display 1



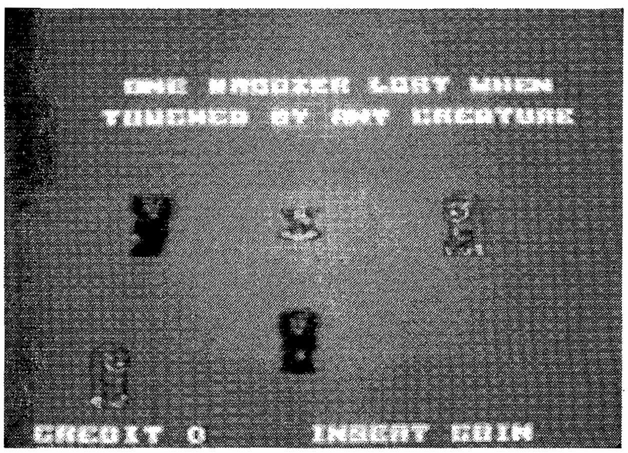
Attract Mode Display 2



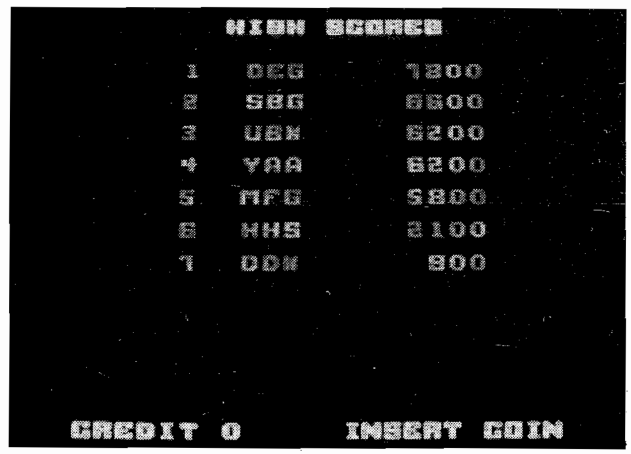
Attract Mode Display 3



Attract Mode Display 5

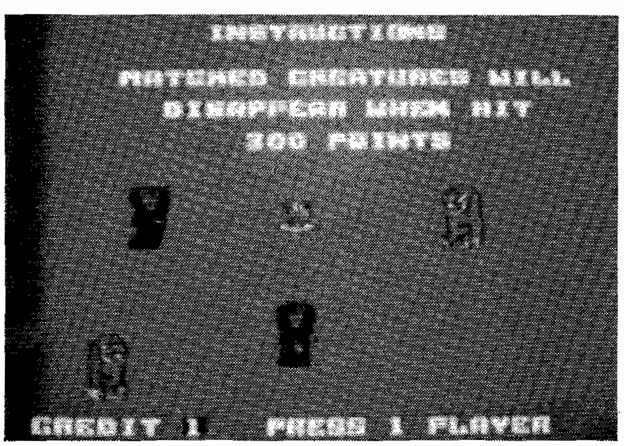


Attract Mode Display 4



Attract Mode Display 6

□ No matter where the game is in the Attract mode sequence, it will immediately go to the following display as soon as a game has been paid for. It will add the words "CREDIT ______" and



Ready To Play Mode Display

"PRESS 1 PLAYER BUTTON" or "PRESS 1 OR 2 PLAYER BUTTON" to the bottom of this display and all other displays in the Attract mode sequence. These words will remain at the bottom of these displays in the Attract mode sequence until the "1 PLAYER" or the "2 PLAYER" start button is pressed.

READY-TO-PLAY MODE

1. The Ready-To-Play mode starts when enough coins have been accepted for a 1 or 2 player game.
2. The Ready-To-Play mode ends when either the "1 PLAYER" or the "2 PLAYER" push button is pressed.
3. In the Ready-To-Play mode, the game will give the above modified displays **centered** on the monitor screen.
4. If no START button is pressed, the displays will remain modified indefinitely as shown above.

PLAY MODE

1. The Play mode begins when either the "1 PLAYER" or the "2 PLAYER" start button is pressed. (One Player game **ONLY,** game play begins **IMMEDIATELY!**)
2. The Play mode ends when all of your SHIPS have been eliminated. When this happens (One Player game ONLY), "GAME OVER" is written across the center of the monitor screen.



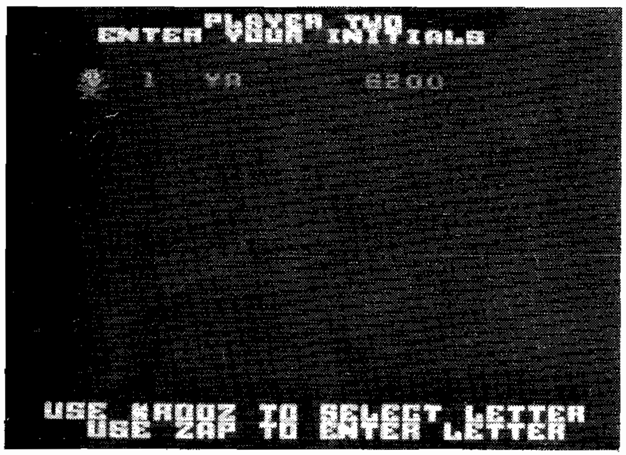
3. **ON THE SCREEN:** The game is made up of groups of 4 sequences for each rack. When play begins your SHIP is on a plain a good distance from the mouth of a cave. In the next sequence, you are a little closer to the mouth of the cave, and so on until in the 4th sequence you are all the way inside the cave. If you survive the cave, you advance to the next rack. In the first sequence of that rack, you are back out on the plain again, a good distance from the mouth of the cave. In the next sequence of this rack, you are a little closer to the mouth of the cave, and so on until in the 4th sequence of this rack you are all the way inside the cave again. This alternating sequence of events continues throughout the game.

   At the beginning of each sequence, when a 2 PLAYER game has been selected, the game tells which player is up.

   Also indicated in each sequence of each rack is the rack number you're playing, the number of players (1 or 2), a running total of the players' score(s), and the highest game score to date.
4. **PLAY BEGINS:** Your SHIP appears in the center the scrren, creatures start appearing around it, and play begins after the last creature has appeared. Your SHIP cannot move until this last creature has appeared.
5. **CREATURES:** Each creature is a dual entity. To shoot only one creature of any given pair only stuns it for a short period of time. When stunned, it will not move about on the screen. Shooting the remaining creature of any given pair while the first is stunned will cause both of these creatures to disappear.
6. **MUTANT CREATURES:** In later racks, mutant creatures can be formed by the player. All he has to do is shoot one creature of any given pair, and, while this creature is stunned, shoot another creature of a **DIFFERENT** given pair. The two shot creatures will exchange body parts to form a mutant. In order to eliminate these mutants, the remaining whole creature of each pair must be mutated as previously described. You now have two complete pairs of mutants which can now be eliminated in the usual manner.
7. **BABIES:** Again, as you move into the higher racks of the game, you will find that as like pairs of creatures/mutants are eliminated — they turn into babies. The babies can be stunned but not eliminated until the last of the creature/mutant pairs have been turned into babies. At this point, the babies can be eliminated. They **DO NOT** have to be shot in pairs. One hit eliminates one baby.
8. **EGGS:** As you move still farther into the more difficult racks, you will find that the babies, when shot, will turn into eggs. The eggs can be stunned but not eliminated until the last of the babies have been turned into eggs. At this point, the eggs can be eliminated. They **DO NOT** have to be shot in pairs. One hit eliminates one egg.
9. **INSIDE THE CAVE:** Game play is essentially the same inside the cave except things look more crowded. The other new thing that you will notice in the cave is that any egg that is shot will hatch and out will come either a bat or a demon. One rack will be bats, the next demons, the next bats, and so on. The bats/demons can be stunned but not eliminated until the last of the eggs has been turned into bats/demons. At this point, the bats/demons can be eliminated. They **DO NOT** have to be shot in pairs. One hit eliminates one bat/demon.
10. **SHIP:** Your SHIP can move in **ANY DIRECTION** on the screen. Its movements are controlled by the ball on the game's control panel.
11. **FIRE CONTROL STICKS:** These control the direction your SHIP will fire in; either left, right, up, or down. There are no in between angles of fire, just those stated above. There are two fire control sticks on the Upright models to allow both left and right handed persons to play the game easily.
12. **BALL CONTROLLER:** By using the ball controller you can position your SHIP at any location you desire on the screen.
13. **BONUS SHIPS:** These can be awarded to the player as he reaches or passes certain preselected point values. This feature is adjustable by the game's Owner/Operator.

14. **PLAY ENDS:** When your last SHIP is eliminated (1 Player game ONLY), "GAME OVER" is written across the bottom center of the monitor screen.

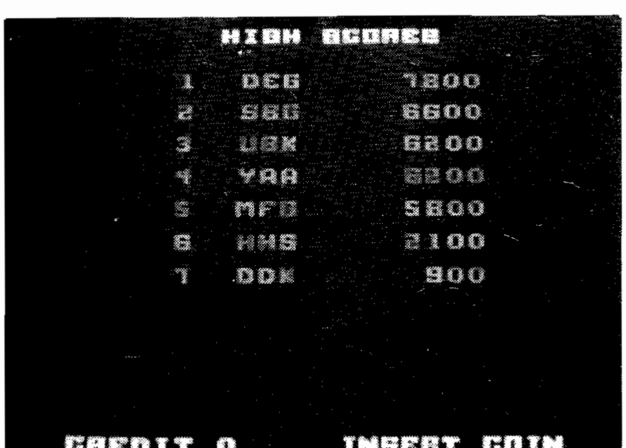
15. **HIGH SCORE/INITIAL MODE:** If your score was high enough to become one of the ten best scores, the game will go into the High Score/Initial mode immediately after the above display. If your score is not high enough to cause the game to go into the High Score/Initial mode, it will either go to the Attract mode (if there are no more credits left in its memory) or into the Ready-To-Play mode (if there are still credits left in its memory). In the High Score/Initial mode the game gives a display which looks like that shown below.



High Score Initial Mode Display

Follow the ON-SCREEN instructions to enter your initials next to your score in the league of the best ten players to date.

When you've printed out your last initial, move the cursor opposite the "END" word and activate the same control you did to enter your initials. This tells the game you are through printing out your initials. The game will then give the following RANKINGS display showing your score opposite your ranking and your initials.



Rankings Display

NOTE: If you don't tell the game you are through printing out your initials as instructed above, the game will automatically go into the RANKINGS display after a short wait.

After the High Score/Initial mode, the game will either go to the Attract mode (if there are no more credits left in its memory) or into the Ready-To-Play mode (if there are still credits left in its memory).

16. Most of the above holds true in the "2 PLAYER" mode also. But there are a few minor differences.

TWO PLAYER OPERATION

The Upright and Cocktail Table models all have two player operation.

In the two player mode, the rules of play are the same as in the single player mode. There are some additional rules, however.

1. In the Upright models, the players must take turns at the controls.
2. In the Cocktail Table model, each player has his own set of individual controls. The picture will flip to face you when it is your turn. (When it is not your turn, your set of controls will have **NO** effect on the game.)
3. Your turn lasts until your SHIP is eliminated. At this point, the game will do one of several things depending on whether or not the eliminated SHIP was your last or if you still have others remaining in reserve.

ELIMINATED SHIP — OTHERS REMAINING IN RESERVE

- ☐ The game stops and "PLAYER_____" is displayed on the screen.
- ☐ Next, the other player's Ship and pattern appear on the monitor screen and game play begins for the other player.

ELIMINATED SHIP — NO OTHERS REMAINING IN RESERVE

- ☐ Game displays: "PLAYER_____" "GAME OVER" on the monitor screen.
- ☐ Next, the remaining player's Ship and pattern appear on the monitor screen and game play begins for the other player.
- ☐ After the last player's last SHIP is eliminated, and if either or both scores were high enough, it goes to the "HIGH SCORE/INITIAL" mode.

  If neither players' score was high enough to cause the game to go into the "HIGH SCORE/INITIAL" mode, the game will either go to the Attract mode (if there are no more credits left in its memory) or into the Ready-To-Play mode (if there are still credits left in its memory).

ASSIGNED POINT VALUES

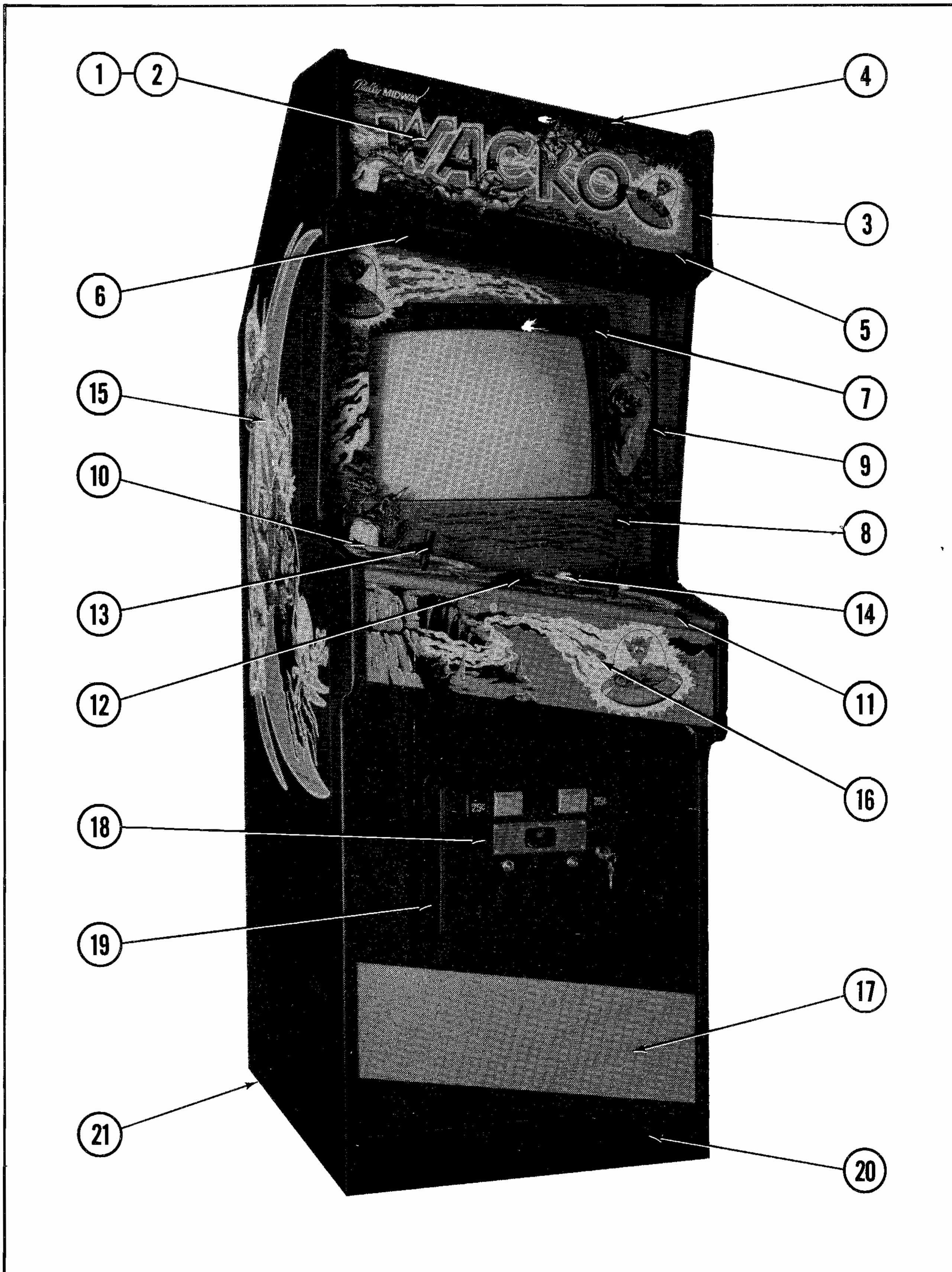
WACKO SCORING

DESCRIPTION	POINTS AWARDED	NOTES
MATCHED PAIRS	300 POINTS EACH PAIR	
MUTANT PAIRS	500 POINTS EACH PAIR	
BABIES	150 POINTS EACH	CANNOT BE DESTROYED UNTIL ALL MATCHED AND MUTANT PAIRS ARE DESTROYED.
EGGS	500 POINTS EACH	ABOVE NOTE APPLIES.
BAT/DEMONS	750 POINTS EACH	ABOE NOTE APPLIES.

SEE INSIDE BACK COVER FOR OPTION SWITCH SETTINGS

II. Illustrated Parts Breakdown

NO. 337 — WACKO — UPRIGHT — FRONT

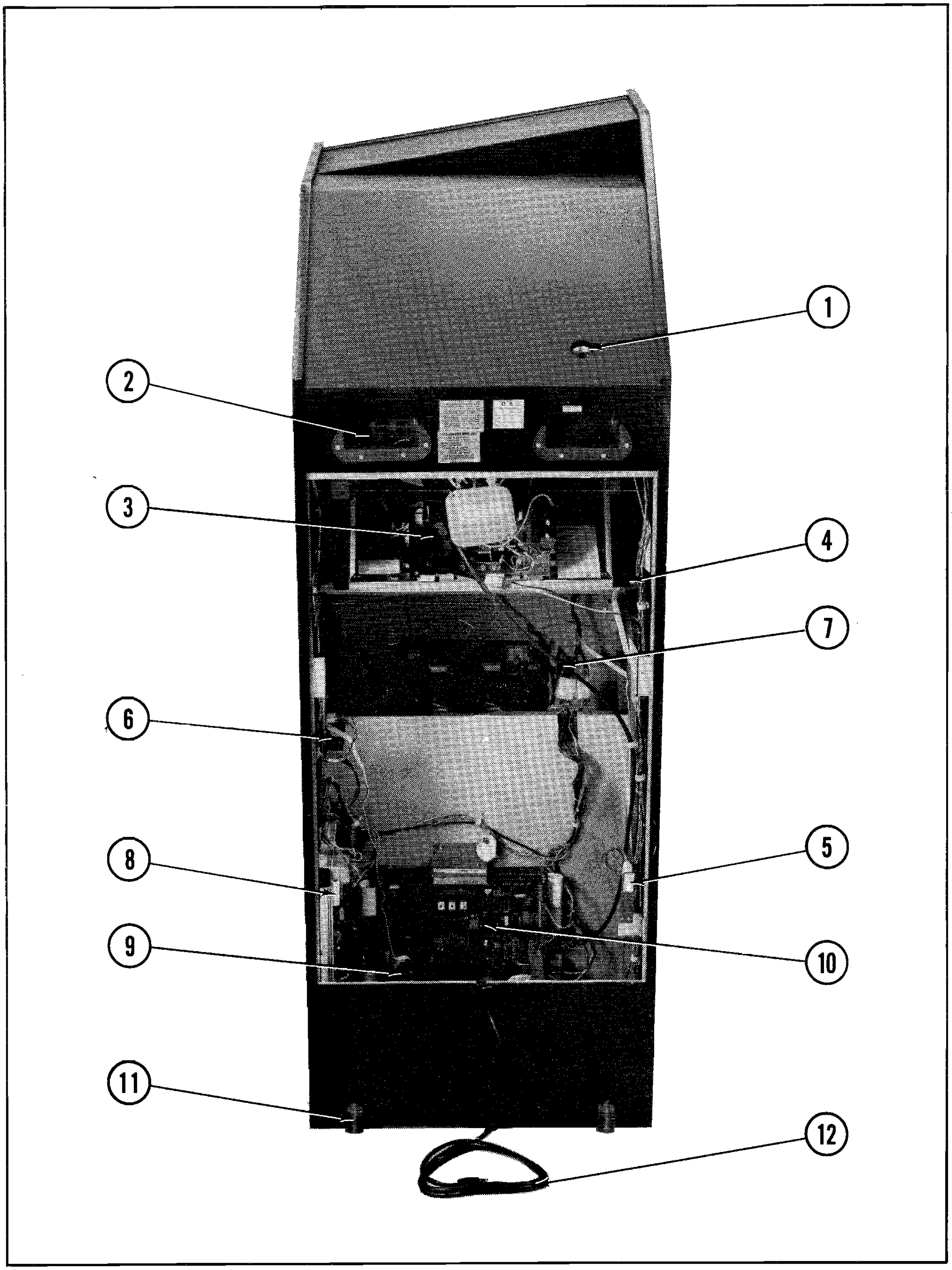


NO. 337 — WACK — UPRIGHT — FRONT PARTS LIST

*ORDER BY PART NUMBER **ONLY***

ITEM	PART NO.	DESCRIPTION
1	0337-00900-00XF	HEADER DISPLAY PLEXI
2	A595-00011-0000	FLUORESCENT HEADER LIGHT ASSY.
3	0537-00903-0064	GLASS CHANNEL — 6-7/8" LG. (2 REQ'D.)
4	0337-00902-0000	HEADER RETAINING BRKT. (2 REQ'D.)
	0017-00101-0138	#8 x 5/8 TORX PAN HD. TAMPER RESISTANT SCREW (10 REQ'D.)
	0017-00009-0522	LONG ARM KEY T-20 (FOR ABOVE SCREW)
5	0017-00042-0323	COIN HOLDER
6	0017-00009-0393	BLACK SPEAKER GRILL W/SLOTS (2 REQ'D.)
	0017-00003-0430	6" x 9" SPEAKER — 4 OHM, 10W. (2 REQ'D.)
	0017-00101-0127	#8-32 x 1-1/2 CARRIAGE BOLT (8 REQ'D.)
	0017-00103-0061	#8-32 HEX NUT W/SEMS (8 REQ'D.)
7	0337-00904-0000	19" T.V. BEZEL
8	0337-00901-00XF	MAIN VIEWING GLASS
9	0537-00903-0002	GLASS CHANNEL — 22" LG.
	0537-00903-0065	GLASS CHANNEL — 25-7/8 LG. (OPPOSITE SIDE)
10	0629-00902-0900	GLASS LIFT CHANNEL — 22-1/4" LG.
11	A337-00014-0000	CONTROL PLATE & OVERLAY ASSY.
	A337-00013-0000	CONTROL SHELF PLATE WELDMENT W/STRIKES ASSY.
	0337-00903-0000	DECORATIVE OVERLAY
	0337-00103-0100	CONTROL SHELF MTG. BRKT. — RIGHT
	0337-00103-0200	CONTROL SHELF MTG. BRKT. — LEFT
	0555-00901-0000	PLASTIC LOCATING PIN (4 REQ'D.)
	0017-00009-0534	BASSICK CLAMP (2 REQ'D.)
	0017-00101-0141	#8 x 11/16 UNSLOT HEX HD. SCR. (8 REQ'D.)
	0316-00903-0000	CONTROL SHELF STRAP
12	A337-00015-0000	BALL CONTROL ASSY.
13	A337-00020-0000	4 POSITION CONTROL ASSY. (2 REQ'D.)
	A337-00006-0000	CONTROL SHELF CABLE ASSY.
14	0017-00042-0260	PUSH BUTTON ASSY. — WHITE (2 REQ'D.)
	0017-00032-0093	PUSH BUTTON SWITCH W/HOLDER (2 REQ'D.)
	0017-00103-0054	5/8-11 PAL NUT (2 REQ'D.)
15	0337-00909-0200	DECAL — LEFT SIDE
	0337-00909-0100	DECAL — RIGHT SIDE (NOT SEEN)
16	0337-00907-0000	DECAL — APRON CONTROL
17	0337-00908-0000	DECAL — FRONT
18	A090-00300-11BK	U.S.A. 25¢ DOUBLE COIN DOOR ASSY.
	A982-00015-0000	COIN DOOR CABLE ASSY.
19	0090-00002-04BK	LARGE BLACK COIN DOOR FRAME
	0017-00101-0121	#6-32 x 5/16 PHIL. TRS. HD. SCR. (3 REQ'D.)
20	0935-00906-0100	KICK PLATE — 23" LG.
21	0017-00102-0048	3/8-16 x 2" LEG LEVELERS (4 REQ'D.)
	0017-00103-0026	3/8-16 LEG LEVELER HEX NUTS (4 REQ'D.)

NO. 337 — WACK — UPRIGHT — REAR ACCESS



NO. 337 — WACKO — UPRIGHT — REAR ACCESS — PARTS LIST

*ORDER BY PART NUMBER **ONLY***

ITEM	PART NO.	DESCRIPTION
1	A945-00038-0000	ON-OFF SWITCH & PLATE ASSY.
2	0894-00916-0000	PLASTIC PULL & VENT (2 REQ'D.)
	0017-00101-0141	#8 x 11/16 UNSLOT HEX HD. M.S. (8 REQ'D.)
3	0017-00003-0339	ELECTROHOME — 19" COLOR DUAL SYNC. HORIZONTAL MTG. MONITOR (OR)
3	0017-00003-0439	WELLS-GARDNER — 19" COLOR DUAL SYNC. HORIZ. MTG. MONITOR (OR)
3	0017-00003-0454	ZENITH — 19" COLOR HORIZ. MTG. MONITOR
	0508-00106-0000	T.V. BEZEL MTG. BRKT.
4	0636-00101-0000	MONITOR RAIL (2 REQ'D.)
	0555-00901-0000	PLASTIC LOCATING PIN (4 REQ'D.)
	0017-00101-0141	#8 x 11/16 UNSLOT. HEX HD. M.S. (8 REQ'D.)
5	A088-00016-0000	INTERLOCK SWITCH & SPRING BRKT. ASSY.
6	A082-90910-E000	DUAL POWER AMP P.C. BOARD ASSY.
7	A333-00012-0000	CREDIT SWITCH & BRKT. ASSY.
8	A082-90412-D000	POWER SUPPLY P.C. BRD. ASSY.
	0624-00902-0100	P.C. SUPPORT BRKT. — 12" LG. (2 REQ'D.)
	0624-00902-0500	P.C. SUPPORT BRKT. — 6-1/2" LG. (2 REQ'D.)
	0017-00101-0141	#8 x 11/16 UNSLOT. HEX HD. M.S. (12 REQ'D.)
	0017-00104-0037	#8 FLAT WASHER (12 REQ'D.)
9	A945-00020-0000	POWER CHASSIS ASSY. — 125VA., 115V.
10	A337-00004-0000	CARD RACK W/BOARDS ASSY.
	A084-90010-A337	SUPER CPU P.C. BOARD ASSY.
	A084-90913-A337	SUPER SOUND I/O P.C. BOARD ASSY.
	A084-91399-A337	VIDEO/GENERATOR P.C. BOARD ASSY.
	0986-00701-00XF	TREADED SPACER (4 REQ'D.)
	0986-00702-00XF	SPACER (4 REQ'D.)
	0017-00101-0153	#6-32 x 1" PHIL. RND. HD. SCREW (4 REQ'D.)
	0017-00101-0339	#6-32 x 3/8 PHIL. RND. HD. SCREW (4 REQ'D.)
11	A961-00007-0000	CASTER ASSY. (2 REQ'D.)
	0961-00109-0000	WHEEL BRKT. (2 REQ'D.)
	0017-00042-0255	PLASTIC WHEEL (2 REQ'D.)
	0894-00702-00XF	SHAFT (2 REQ'D.)
	0017-00100-0037	3/8" E-RING (2 REQ'D.)
12	A945-00019-0000	LINE CORD ASSY.

NO. 337 — WACKO — UPRIGHT — REAR ACCESS — PARTS LIST (Continued)

*ORDER BY PART NUMBER **ONLY***

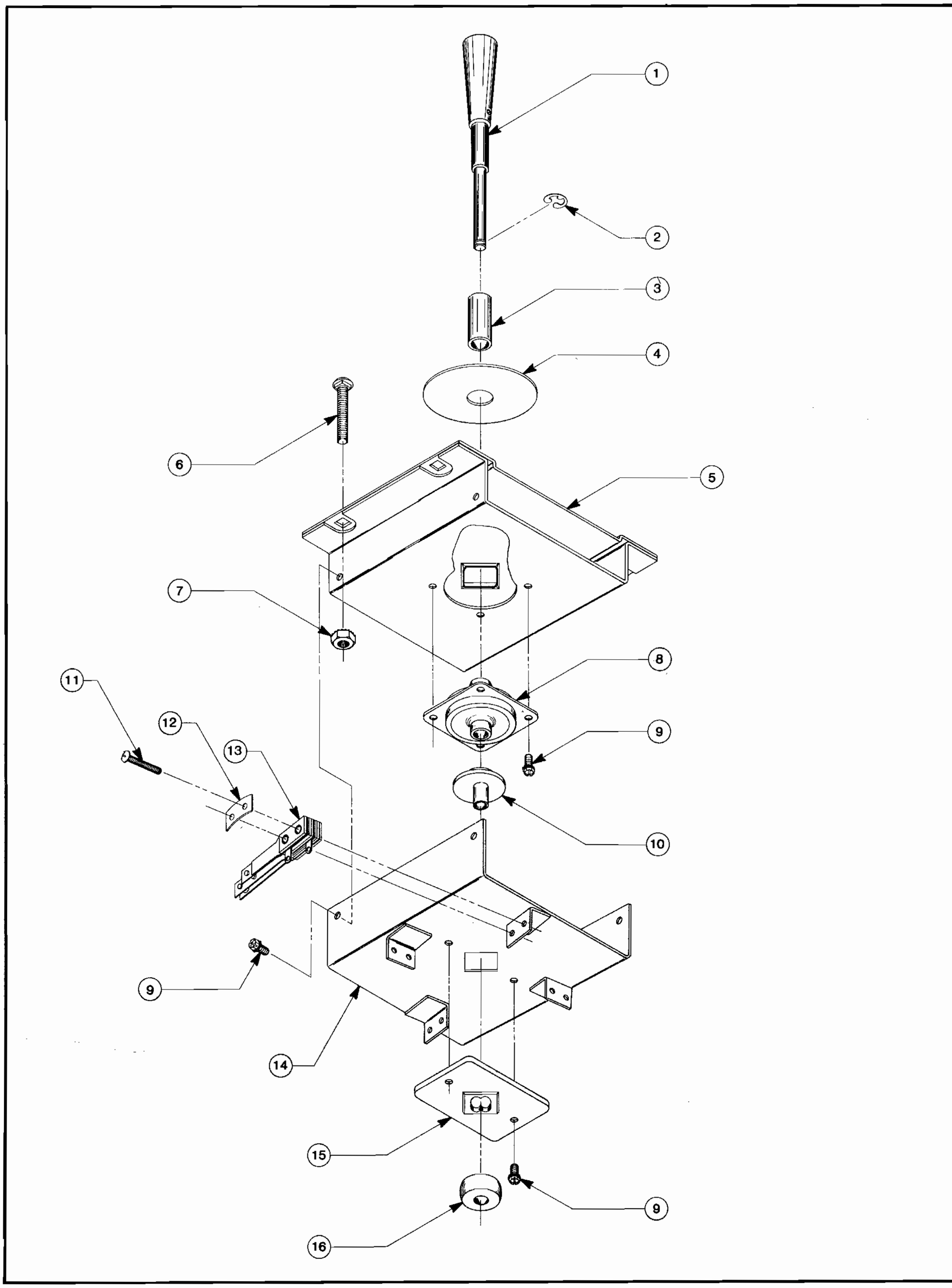
ITEM	PART NO.	DESCRIPTION
		ADDITIONAL PARTS LIST
	A097-00009-0000	BACK DOOR LOCK ASSY.
	0017-00009-0490	5-5/8" SQR. VENT GRILL — BACK DOOR (4 REQ'D.)
	A950-00004-0000	COIN BOX ASSY.
	A950-00006-0000	COIN BOX CRADLE ASSY.
	0950-00105-0000	COIN BOX COVER
	0950-00104-0000	COIN BOX HANDLE
	0950-00101-0000	COIN DEFLECTOR (2 REQ'D.)
	0950-00900-0000	LARGE PLASTIC COIN BOX
	0950-00103-0000	COIN BOX DIVIDER — OPTIONAL
	0017-00101-0142	1/4-20 x 1-3/8 BLACK RND. HD. BOLT (4 REQ'D.)
	0017-00104-0014	7/8" DISH WASHER (4 REQ'D.)
	0017-00103-0018	1/4-20 HEX NUT (4 REQ'D.)
	A337-00008-0000	MASTER CABLE W/BRKT. ASSY.
	A337-00010-0000	HIGH VOLTAGE CABLE ASSY.
	A316-00010-0000	LOW VOLTAGE CABLE ASSY.
	A337-00018-0000	VIDEO CABLE ASSY.
	A337-00019-0000	AUDIO CABLE ASSY.

NO. 337 — 4 POSITION CONTROL ASSY. — PARTS LIST

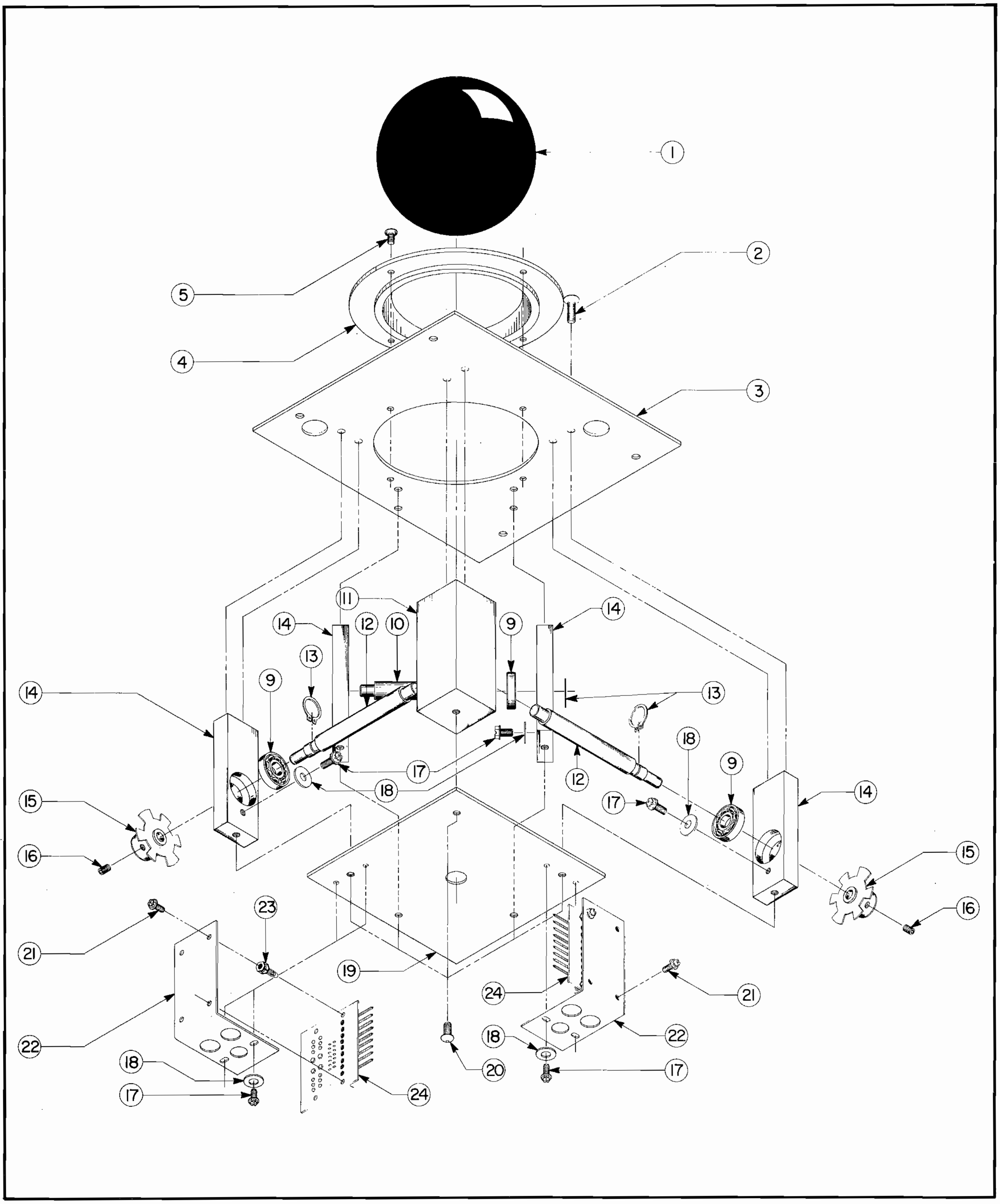
*ORDER BY PART NUMBER **ONLY***

ITEM	PART NO.	DESCRIPTION
1	A337-00021-0000	HANDLE ASSY.
2	0017-00100-0025	1/4" E-RING
3	0337-00708-0000	STOP SPACER
4	0530-00907-0000	SLIDE PLATE
5	A982-00019-0000	PIVOT PLATE WELD ASSY.
6	0017-00101-0637	#8-32 x 1" CARRIAGE BOLT (4 REQ'D.)
7	0017-00103-0061	#8-32 HEX NUT W/SEMS (4 REQ'D.)
8	0337-00911-0000	GROMMET
9	0017-00101-0598	#8-32 x 5/16 SLT. HEX HD. M.S. (10 REQ'D.)
10	0337-00906-0000	SLEEVE
11	0017-00101-0528	#5-40 x 3/4 PHIL. RND. HD. SCR. (8 REQ'D.)
12	0020-00202-0000	SWITCH PLATE (4 REQ'D.)
13	A337-00017-0000	SWITCH ASSEMBLY (4 REQ'D.)
14	A932-00012-0000	STOP PLATE & SWITCH BRKT. ASSY.
15	0337-00905-0000	WEAR PLATE
16	0921-00700-0000	ACTUATOR

NO. 337 — 4 POSITION CONTROL ASSY.



NO. 337 — WACKO — BALL CONTROL ASSEMBLY

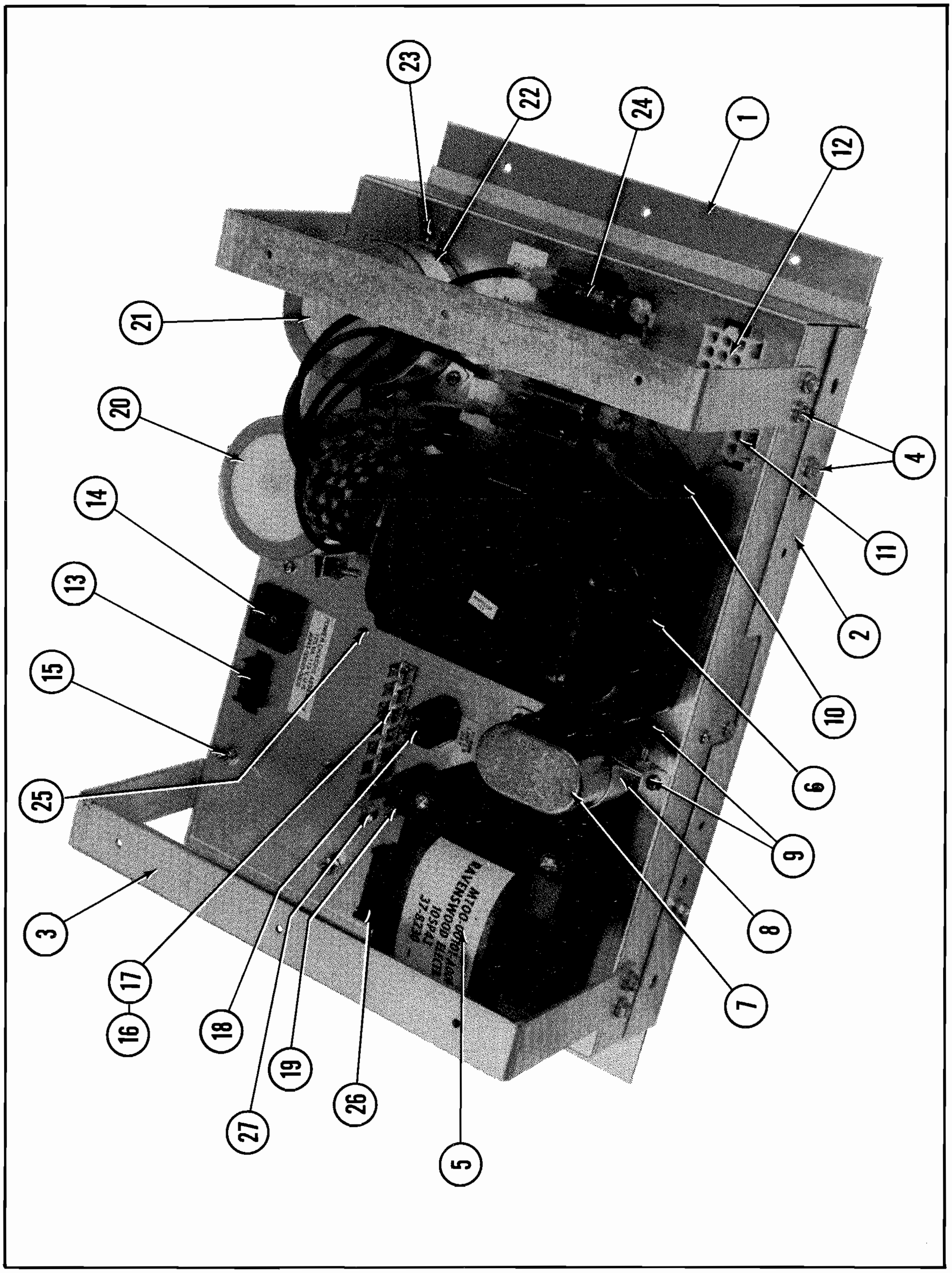


NO. 337 — WACKO — BALL CONTROL ASSEMBLY — PARTS LIST

ORDER BY PART NUMBER ***ONLY***

ITEM	PART NO.	DESCRIPTION
1	0017-00041-0625	3" DIA. BLACK RUBBER BALL
2	0017-00101-0120	#10-24 x 1/2 HEX FLAT HD. M.S. (10 REQ'D.)
3	0337-00101-0000	BALL CONTROL MTG. PLATE
4	0337-00910-0000	BALL RING
5	0017-00101-0550	#6-32 x 1/4 PHIL. FLAT HD. M.S. (4 REQ'D.)
9	0017-00006-0085	ROLLER BEARING (6 REQ'D.)
10	0337-00705-00XF	IDLER SHAFT
11	0337-00702-0000	MAIN POST
12	0337-00704-00XF	SHAFT (2 REQ'D.)
13	0017-00100-0114	RETAINING RING (3 REQ'D.)
14	0337-00703-0000	END POST (4 REQ'D.)
15	A643-00010-0000	BUSHING & DISC ASSY. (2 REQ'D.)
16	0017-00101-0302	#6-32 x 3/16 HEX HD. SOCKET SET SCR. (4 REQ'D.)
17	0017-00101-0599	#8-32 x 3/8 SLT. HEX S.M.S. (7 REQ'D.)
18	0017-00104-0026	#8 FLAT WASHER (7 REQ'D.)
19	0337-00104-0000	BALL CONTROL PLATE — BOTTOM
20	0017-00101-0119	#10-24 x 1/2 HEX BUT HD. M.S. (5 REQ'D.)
21	0017-00101-0099	#6 x 1/4 SLT. HEX HD. M.S. (8 REQ'D.)
22	0889-00103-00XF	SENSOR P.C. MTG. BRKT. (2 REQ'D.)
23	0017-00042-0285	1/4" P.C.B. SPACER (8 REQ'D.)
24	A084-91429-C000	X-Y BALL SENSOR P.C. BRD. ASSY. (2 REQ'D.)

WACKO — POWER CHASSIS ASSY. — 125VA., 115V.

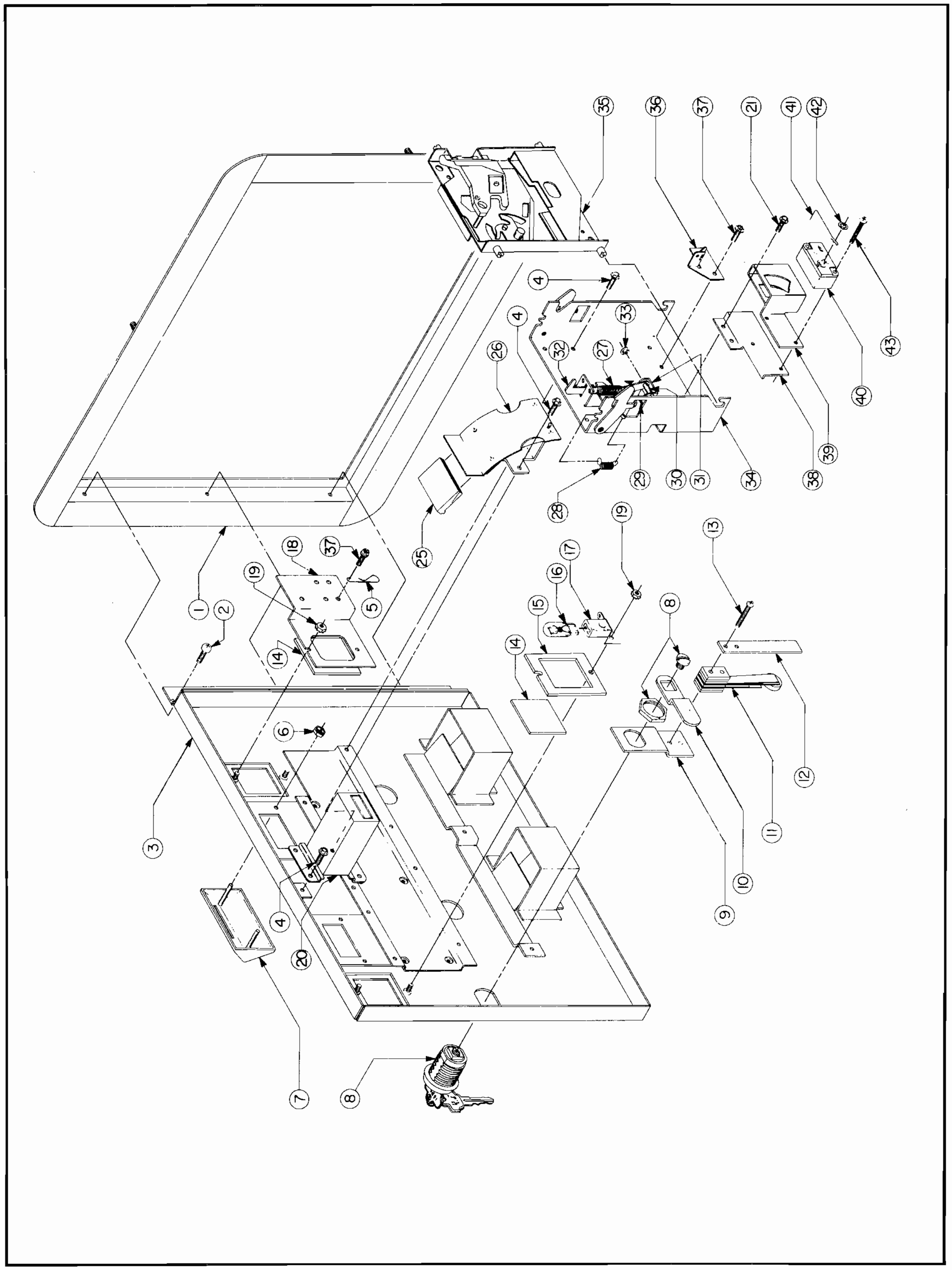


WACKO — POWER CHASSIS ASSY. — 125VA., 115V. — PARTS LIST

ORDER BY PART NUMBER ***ONLY***

ITEM	PART NO.	DESCRIPTION
1	0945-00104-00XF	CHASSIS
2	A945-00029-0100	MTG. PLATE & BARRIER ASSY.
3	0945-00107-01XF	STRAP (2 REQ'D.)
4	0017-00101-0123	#8 x 1/4 UNSLOT. HEX HD. SCR. (12 REQ'D.)
5	MT00-00101-A000	ISOLATION TRANSFORMER W/O SHIELD ASSY. — 115V., 50/60 HZ.
	0017-00103-0061	#8-32 HEX NUT W/SEMS (4 REQ'D.)
6	MT00-00099-A000	POWER TRANSFORMER ASSY. — 115V., 60 HZ.
	0017-00103-0084	#6-32 HEX NUT W/SEMS (4 REQ'D.)
7	0175-181T4-GXJK	CAPACITOR — 3.5 M.F., 440V.
8	0017-00009-0535	CLAMP
	0017-00101-0565	#6-32 x 7/16 SLT. PAN HD. SCR.
	0017-00103-0084	#6-32 HEX NUT W/SEMS
9	0017-00101-0067	#6 x 3/8 PHIL. PAN HD. SCR. (11 REQ'D.)
	0945-00103-00XF	PARTITION — LOCATED UNDER CHASSIS (NOT SEEN)
10	0945-00902-0000	SNAP BUSHING (3 REQ'D.)
11	0017-00021-0297	2 POSITION CONNECTOR
12	A945-00030-0100	CONNECTOR & CABLE ASSY. #1
13	A945-00030-0200	CONNECTOR & CABLE ASSY. #2
14	A945-00021-0000	CONVENIENCE OUTLET ASSY.
15	0017-00101-0573	#6-32 x 1/2 PHIL. RND. HD. SCR. (2 REQ'D.)
	0017-00103-0084	#6-32 HEX NUT W/SEMS (2 REQ'D.)
	A945-00025-0000	FILTER ASSEMBLY — 125V. — UNDER CHASSIS (NOT SEEN)
16	0017-00021-0510	TERMINAL STRIP
17	0017-00101-0140	#4-40 x 5/16 PHIL. PAN HD. SCR. (2 REQ'D.)
18	0017-00003-0263	SLO-BLO FUSE — 4A., 250V.
19	0017-00003-0005	FUSE — 2A., 250V.
	0017-00003-0444	QUICK CONN. FUSEHOLDER (2 REQ'D.) — FOR ABOVE FUSES
20	0945-00816-1902	CAPACITOR — 100,000 M.F.
21	0945-00816-1901	CAPACITOR — 55,000 M.F.
	0017-00104-0107	#10 FLAT WASHER (4 REQ'D.)
	0017-00103-0081	#10-32 HEX NUT W/SEMS (4 REQ'D.)
22	0017-00009-0422	CLAMP (2 REQ'D.)
	0017-00101-0758	#8-32 x 3/4 PHIL. RND. HD. SCREW (2 REQ'D.)
	0017-00103-0061	#8-32 HEX NUT W/SEMS (2 REQ'D.)
23	0017-00101-0067	#6 x 3/8 PHIL. PAN HD. SCR. (6 REQ'D.)
24	0945-00904-0000	5 POSITION FUSE HOLDER
	0017-00003-0263	SLO-BLO FUSE — 4A., 250V.
	0017-00003-0217	SLO-BLO FUSE — 2.5A., 250V. (2 REQ'D.)
	0017-00003-0007	SLO-BLO FUSE — 3A., 250V. (2 REQ'D.)
	0945-00903-0000	FUSE HOLDER BARRIER
	A945-00022-0000	HEATSINK & DIODE ASSY.
	0017-00101-0067	#6 x 3/8 PHIL. PAN HD. SCR. (2 REQ'D.)
25	0017-00101-0780	#6 x 1/2 PHIL. PAN HD. SCREW (2 REQ'D.)
	0017-00021-0629	5 POSITION TERMINAL STRIP — (UNDER CHASSIS)
	A945-00019-0000	LINE CORD ASSY. — 115V. (NOT SHOWN)
26	A945-00030-0500	CONNECTOR & CABLE ASSY.
27	0017-00101-0660	#10-32 x 3/4 PAN HD. SCREW
	0017-00104-0107	#10 FLAT WASHER
	0017-00103-0081	#10-32 HEX NUT W/SEMS

FRONT DOOR ASSEMBLY — U.S.A. 25¢

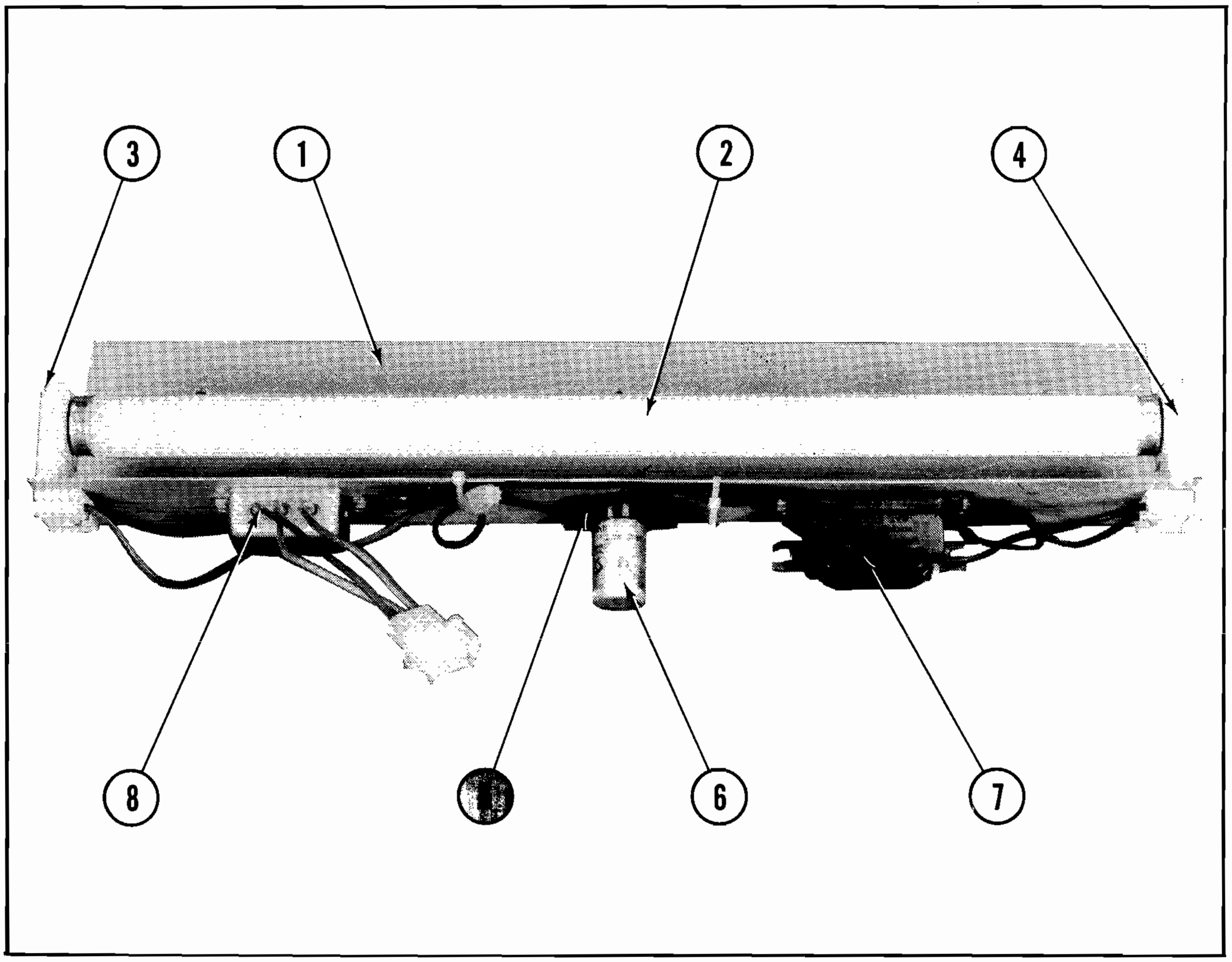


FRONT DOOR ASSEMBLY — U.S.A. 25¢ — PARTS LIST

*ORDER BY PART NUMBER **ONLY***

ITEM	PART NO.	DESCRIPTION
1	0090-00002-04BK	DOUBLE ENTRY COIN DOOR FRAME
2	0017-00101-0121	#6-32 x 5/16 PHIL. TRS. HD. SCR. (3 REQ'D.)
3	A090-00073-02BK	DOUBLE ENTRY COIN DOOR W/DRESS PLATE
4	0017-00101-0123	#8 x 1/4 UNSLOT. HEX HD. SCREW (12 REQ'D.)
5	0017-00007-0019	KEY HOOK
6	0017-00103-0059	PUSH NUT (4 REQ'D.)
7	0090-00912-0000	COIN ENTRY PLATE — 25¢ (2 REQ'D.)
8	A097-00005-0000	DOOR LOCK & KEY W/SCREW & NUT (OR)
8	A097-00006-0000	DOOR LOCK & KEY W/SCREW & NUT
9	0090-00128-00XF	DOOR TILT SWITCH BRKT.
10	0017-00005-0041	DOOR CAM
11	A090-00095-0000	DOOR TILT SWITCH
12	0090-00126-03XF	SWITCH BACK-UP PLATE
13	0017-00101-0525	#5-40 x 9/16" PHIL. HD. M.S. (2 REQ'D.)
	A090-00096-0000	DOOR TILT SWITCH & BRKT. ASSY. (ITEMS 9 & 11 THRU 13)
14	0090-00903-9500	25¢ WINDOW (2 REQ'D.)
15	0090-00143-00XF	COIN PLEX RETAINER
16	0017-00003-0219	12 VOLT LAMP — G.E. #194 (2 REQ'D.)
17	0017-00031-0048	WEDGE SOCKET W/BRKT. (2 REQ'D.)
18	A090-00100-0000	BRKT. ASSY.
19	0017-00103-0084	#6-32 HEX NUT W/SEMS (4 REQ'D.)
20	A090-00089-0000	COIN METER W/DIODE
21	0017-00101-0124	#6 x 1/4 UNSLOT. HEX HD. SCR. (4 REQ'D.)
25	0090-00911-0000	INSULATOR (2 REQ'D.)
26	A090-00112-0000	COIN CHUTE & INSULATOR ASSY. (2 REQ'D.)
27	0010-00134-0000	SPRING
28	0010-00181-0000	SPRING
29	0017-00007-0083	1/8 x 1-5/8 ROLL PIN
30	0090-00129-00XF	PIVOT POST
31	0090-00167-00XF	PIVOT LEVER
32	0090-00182-00XF	REJECT LEVER
33	0017-00100-0018	E-RING
	A090-00088-0000	REJECT LEVER ASSY. (2 REQ'D.) (ITEMS 30 THRU 33)
34	A090-00105-0000	COIN ACCEPTOR FRAME ASSY. (2 REQ'D.)
35	0017-00005-0003	COIN ACCEPTOR W/STRING CUTTER (2 REQ'D.) (OR)
35	0017-00005-0211	COIN ACCEPTOR W/ANTI STRING DEVICE (2 REQ'D.) (OR)
35	0017-00005-0214	COIN ACCEPTOR W/STRING CUTTER (2 REQ'D.)
36	A090-00064-0000	ANTI-PENNY DEVICE
37	0017-00101-0099	#6 x 1/4 SLT. HEX HD. M.S. (2 REQ'D.)
38	0090-00162-00XF	COIN SWITCH MTG. BRKT.
39	0017-00005-0203	COIN SWITCH CHUTE
40	0017-00005-0195	COIN SWITCH
41	0010-00599-0000	COIN SWITCH WIRE
42	0017-00007-0015	PUSH-ON RING
	A090-00059-0400	COIN SWITCH & WIRE ASSY. (ITEMS 40 THRU 42)
43	0017-00101-0147	#4-40 x 3/4 PHIL. PAN. HD. M.S. (2 REQ'D.)
	A090-00077-0000	COIN GUIDE & SWITCH ASSY. (ITEMS 38 THRU 43)

NO. 337 — WACKO — UPRIGHT — HEADER FLUORESCENT LIGHT ASSY.

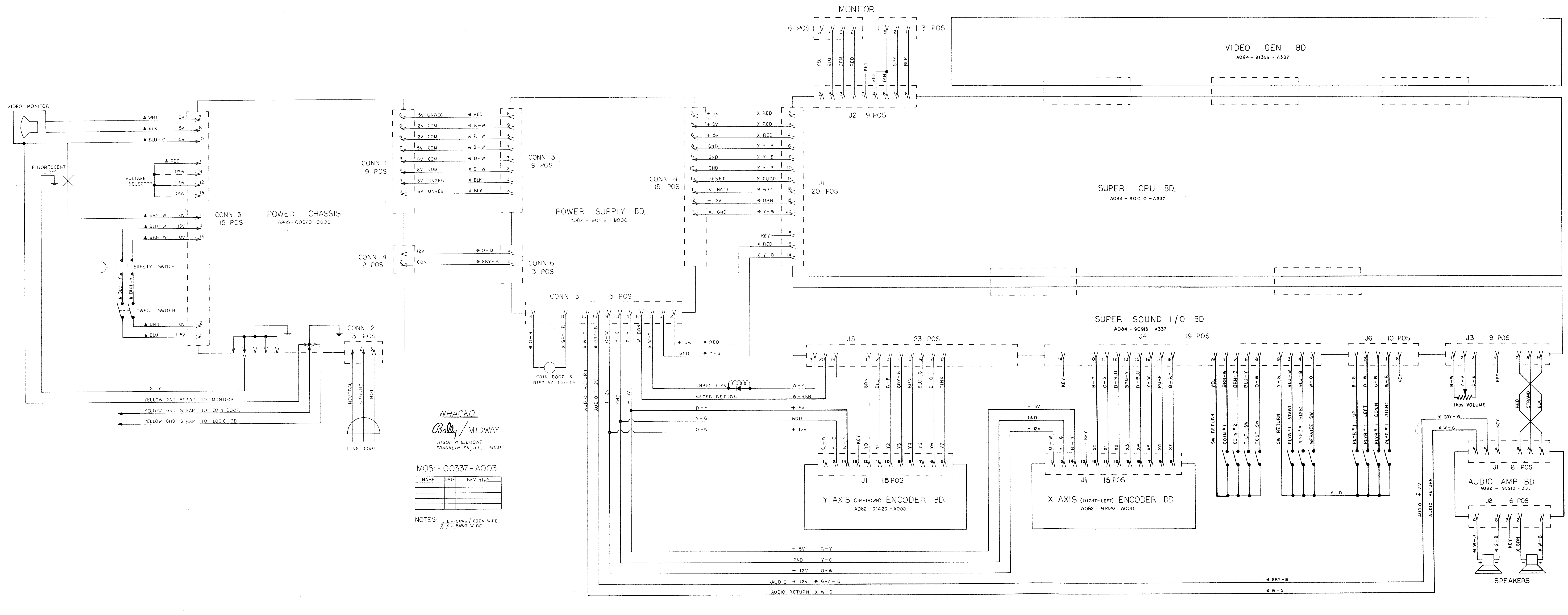


NO. 337 — WACKO — UPRIGHT — HEADER FLUORESCENT LIGHT ASSY. — PARTS LIST

*ORDER BY PART NUMBER **ONLY***

ITEM	PART NO.	DESCRIPTION
1	0595-00105-0000	FLUORESCENT BRKT.
2	0017-00003-0043	18″ COOL WHITE FLUORESCENT LAMP
3	0017-00003-0445	LAMP LOCKS (2 REQ'D.)
4	0017-00031-0036	FLUORESCENT SOCKET (2 REQ'D.)
5	0017-00003-0412	FLUORESCENT STARTER HOLDER W/LEADS
	0017-00101-0573	#6-32 x 1/2 PHIL. RND. HD. M.S. (4 REQ'D.)
	0017-00104-0009	#6 EXT. WASHER (4 REQ'D.)
6	0017-00003-0019	FLUORESCENT STARTER
7	0017-00003-0026	BALLAST
	0017-00101-0598	#8-32 x 5/16 SLT. HEX HD. SCR. (4 REQ'D.)
8	A961-00042-0000	LINE FILTER ASSY.

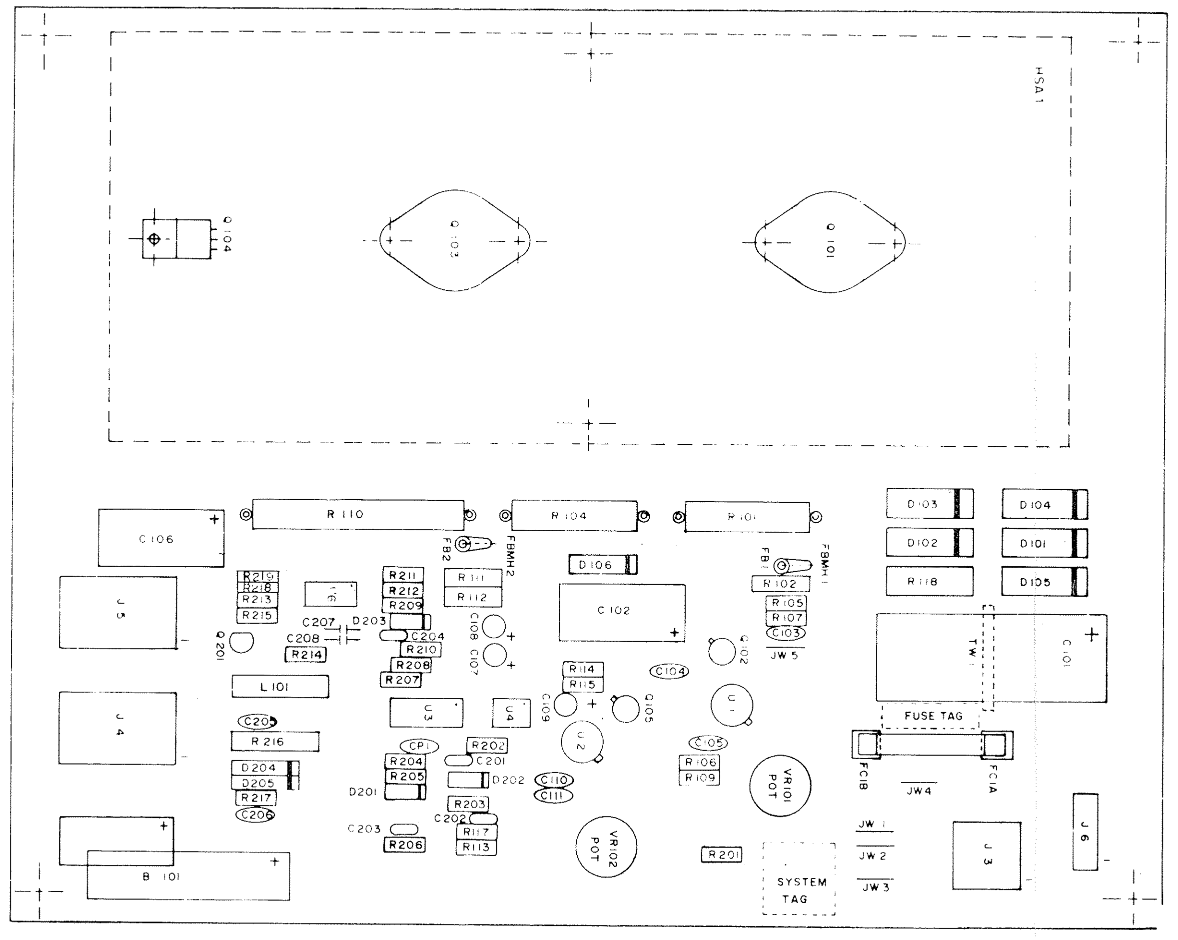
III. Wiring Diagrams and Schematics


MONITOR
6 POS
3 POS
VIDEO GEN BD
A084 - 91359 - A337
J2 9 POS
VIDEO MONITOR
FLUORESCENT LIGHT
VOLTAGE SELECTOR
SAFETY SWITCH
POWER SWITCH
CONN 3
15 POS
POWER CHASSIS
A945 - 00020 - 0000
CONN 1
9 POS
CONN 3
9 POS
CONN 4
2 POS
CONN 6
3 POS
CONN 4
15 POS
POWER SUPPLY BD.
A082 - 90412 - B000
J1
20 POS
SUPER CPU BD.
A084 - 90010 - A337
CONN 2
3 POS
CONN 5 15 POS
COIN DOOR & DISPLAY LIGHTS
NEUTRAL
GROUND
HOT
LINE CORD
YELLOW GND STRAP TO MONITOR
YELLOW GND STRAP TO COIN DOOR
YELLOW GND STRAP TO LOGIC BD
WHACKO
Bally / MIDWAY
10601 W BELMONT
FRANKLIN PK, ILL. 60131
M051 - 00337 - A003
NAME
DATE
REVISION
NOTES: 1. ▲ = 18AWG / 600V WIRE
2. ✱ = 18AWG WIRE
SUPER SOUND I/O BD
A084 - 90913 - A337
J5 23 POS
J4 19 POS
J6 10 POS
J3 9 POS
1KΩ VOLUME
Y AXIS (UP-DOWN) ENCODER BD.
A082 - 91429 - A000
J1 15 POS
X AXIS (RIGHT-LEFT) ENCODER BD.
A082 - 91429 - A000
J1 6 POS
AUDIO AMP BD
A082 - 90910 - 00
J2 6 POS
SPEAKERS
SW RETURN
COIN #1
COIN #2
TILT SW
TEST SW
PLYR #1 START
PLYR #2 START
SERVICE SW
PLYR #1 UP
PLYR #1 LEFT
PLYR #1 DOWN
PLYR #1 RIGHT
AUDIO RETURN
AUDIO + 12V
UNREG + 5V
METER RETURN

DESIGNATION LIST

DESIGNATION #	DESCRIPTION
C101	4700uf AX. ELECT.
C102	470uf AX. ELECT.
C103	.1uf AX. CER.
C104	.1uf AX. CER.
C105	47pf AX. CER.
C106	470uf AX. ELECT.
C107	100uf RD. TANT.
C108	1uf RD. TANT.
C109	4.7uf RD. TANT.
C110	.1uf AX. CER.
C111	.1uf AX. CER.
C201	.01uf MYLAR
C202	.033uf MYLAR
C203	.01uf MYLAR
C204	.047uf MYLAR
C205	820pf AX. CER.
C206 C208	.01uf AX. CER.
C207	0.082uf MYLAR
CP1	.1uf AX. CER.
R101	.18ohm 5W W/RES. SPACER
R102	68ohm 1/2W 5%
R104	10ohm 5W W/RES. SPACER
R105	27ohm 1/4W 5%
R106	270ohm 1/4W 5%
R107	6.2K 1/4W 5%
R109	1K 1/4W 5%
R110	.16ohm 15W W/RES. SPACER
R111	6.8ohm 1/2W5%
R112	68ohm 1/2W 5%
R113	1 2K 1/4W 5%
R114	47ohm 1/4W 5%
R115	160ohm 1/4W 5%

DESIGNATION #	DESCRIPTION
R117	560ohm 1/4W 5%
R118	150ohm 2W
R201	270ohm 1/4W 5%
R202	1.2K 1/4W 5%
R203	1.1M 1/4W 5%
R204	3.3M 1/4W 5%
R205	10M 1/4W 5%
R206	100K 1/4W 5%
R207	33K 1/4W 5%
R208	2M 1/4W 5%
R209	1M 1/4W 5%
R210	1.2M 1/4W 5%
R211	75K 1/4W 5%
R212	75K 1/4W 5%
R213	220K 1/4W 5%
R214	3.9K 1/4W 5%
R215	1.2K 1/4W 5%
R216	82ohm 1W 10%
R217	270ohm 1/4W 5%
R218	110K 1/4W 5%
R219	68ohm 1/2W5%
VR101,102	100ohm POT
D101	A15F
D102	A15F
D103	A15F
D104	A15F
D105	A15F
D106	1N4001
D201	1N4148
D202	1N4148
D203	1N4148
D204	1N4001
D205	1N4001
Q102	2N2905
Q105	2N2905
Q201	2N4401
U1	LM305 REG.
U2	LM305 REG
U3	LM3900
U4	4N28
U6	555
L101	22uH INDUCTOR
B101	BATTERY 3.6VDC 60DEG C
F1	3 8A S BLO FUSE
FC1A,1B	FUSE CLIP
FB1,2	FERRITE BEAD
TW1	TIE WRAP
J3	9PIN P.C. MOUNT CONN.(MALE)
J4	15PIN P.C. MOUNT CONN.(FEMALE)
J5	15PIN P.C. MOUNT CONN.(MALE)
J6	3PIN P.C. MOUNT CONN.(MALE)
LB1	FUSE TAG
LB2	SYSTEM TAG
HSA1	HEAT SINK ASS'Y 1
MHHSA1	MOUNTING HARD WARE(HEAT SINK) 2 SCREW 4 WASHER 2 HEXNUT
JW1 5	JUMPER WIRE
FBMH1,2	FERRITE BEAD MOUNTING HARDWARE

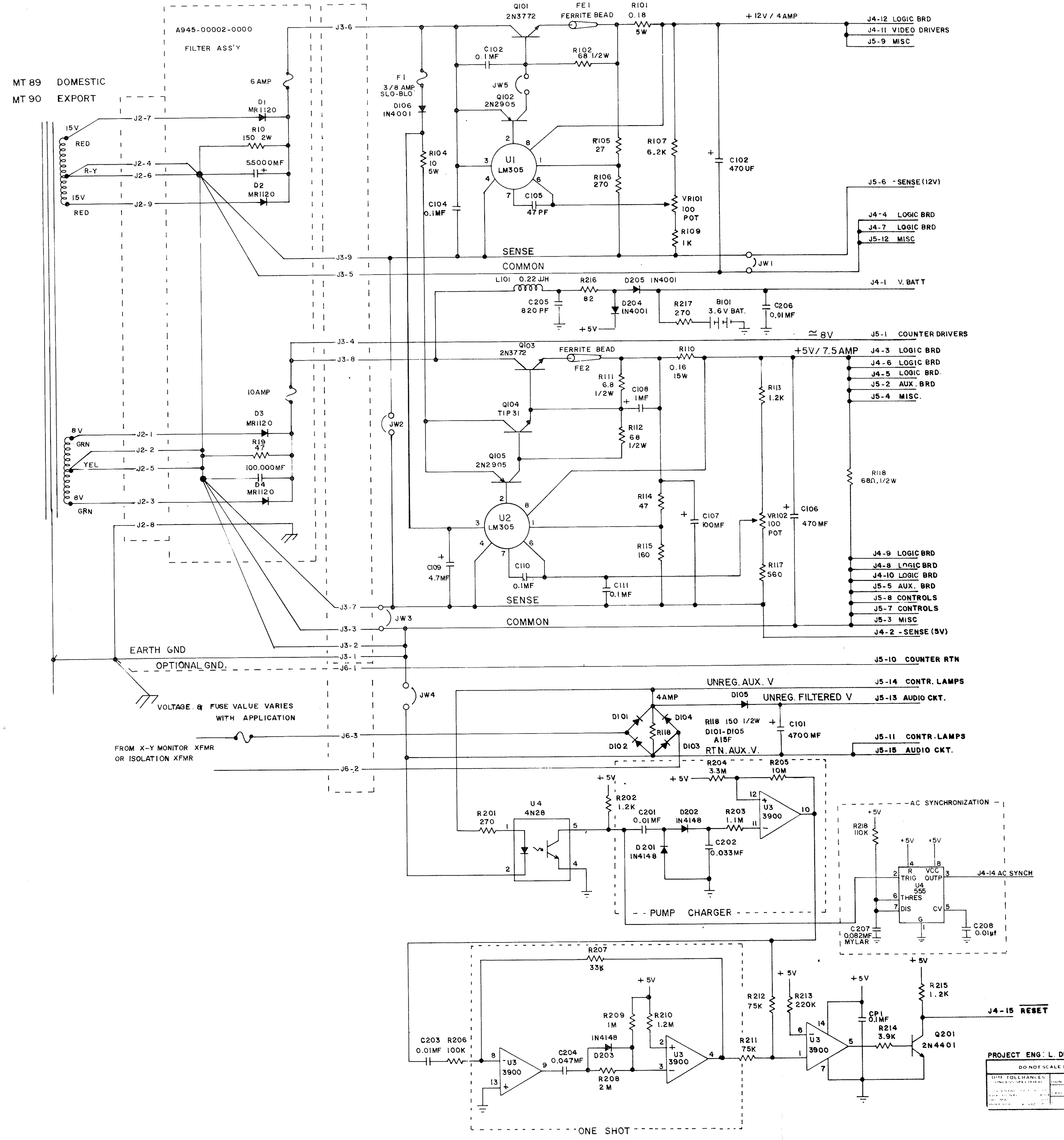


PROJ. ENG.: L. DEKKER

DO NOT SCALE DWG	SCALE: FULL	NO REQ'D 1 PER.
DATE: 5/14/82	ASSEMBLY DRAWING 125VA PWRSPY. A082-90412-D000	MIDWAY MFG. CO. FRANKLIN PK. ILL. M051-00945-D006

CROSS REFFERENCE LIST

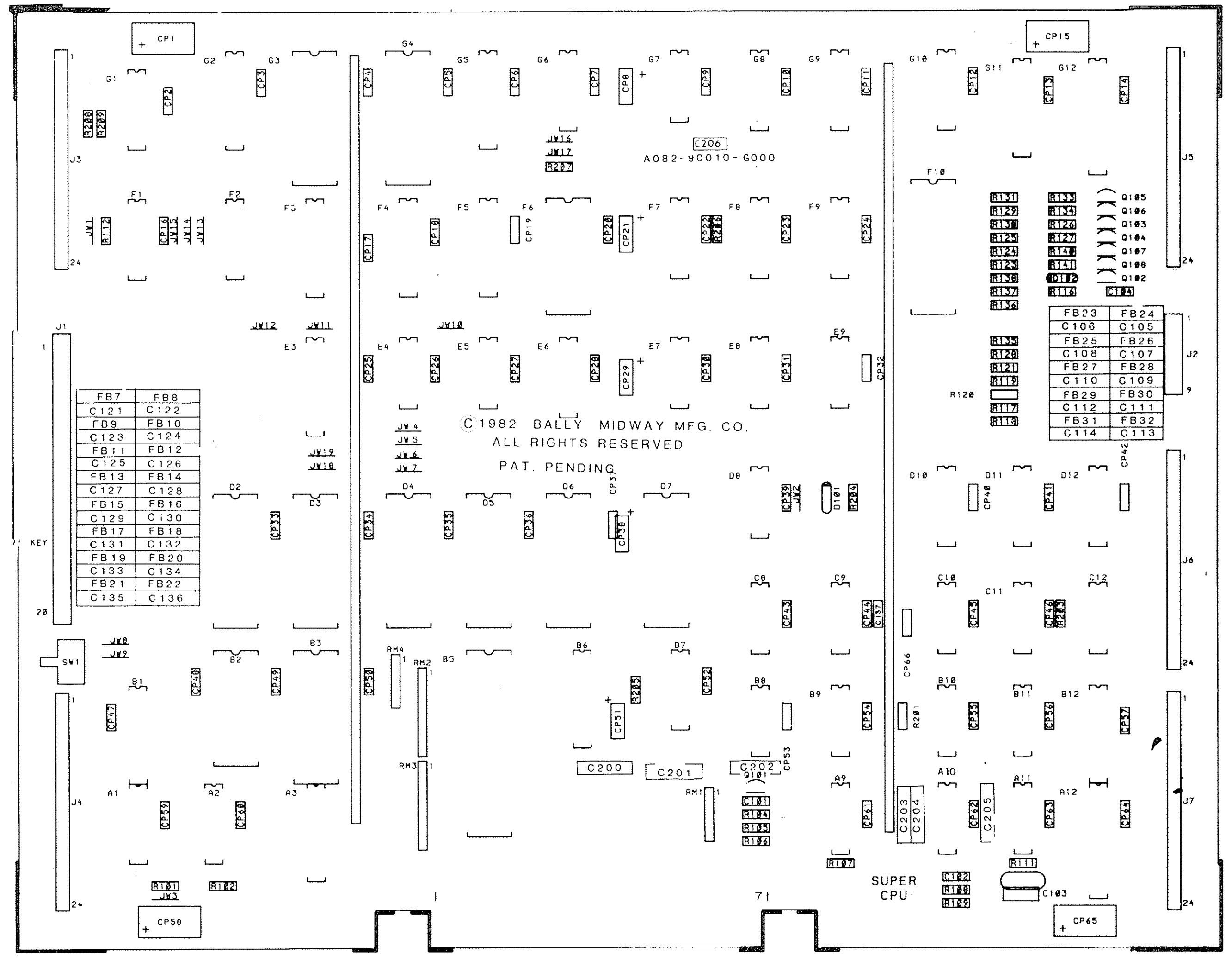
DESCRIPTION	Q'ty	DESIGNATION #	PART #
47pf AX. CER.	1	C105	0945-00811-0100
820pf AX. CER.	1	C205	0945-00816-0400
.01uf AX. CER.	2	C206,208	0945-00816-0100
.01uf MYLAR	2	C201,203	0945-00816-0200
.033uf MYLAR	1	C202	0945-00816-0500
.047uf MYLAR	1	C204	0945-00816-0300
0.082uf AX.CER	1	C207	0945-00816-1900
.1uf AX. CER	5	C103,104,110,111, CP1	0945-00811-0200
1uf RAD. TANT	1	C108	0945-00811-0300
4.7uf RAD. TANT	1	C109	0945-00811-0400
100uf RAD. TANT	1	C107	0945-00811-0500
470uf AX. ELECT.	2	C102,106	0945-00816-0600
4700uf AX. ELECT.	1	C101	0945-00811-0700
.16ohm 15W 5%	1	R110	0945-00815-0100
.18ohm 5W 5%	1	R101	0945-00815-0200
6.8ohm 1/2W 5%	1	R111	0062-047D3-1XXX
10ohm 5W 5%	1	R104	0945-00812-0100
27ohm 1/4W 5%	1	R105	0062-068B3-1XXX
47ohm 1/4W 5%	1	R114	0062-086B3-1XXX
68ohm 1/2W 5%	3	R102,112,219	0062-098D3-1XXX
82ohm 1W 10%	1	R216	0062-104F5 1XXX
150ohm 2W 5%	1	R118	0945-00812-0200
160ohm 1/4W 5%	1	R115	0062-124B3-1XXX
270ohm 1/4W 5%	3	R106,201,217.	0062-138B3-1XXX
560ohm 1/4W 5%	1	R117	0062-162B3-1XXX
1K 1/4W 5%	1	R109	0062-179B3-1XXX
1.2K 1/4W 5%	3	R113,202,215	0062-183B3-1XXX
3.9K 1/4W 5%	1	R214	0062-207B3-1XXX
6.2K 1/4W 5%	1	R107	0062-217B3-1XXX
33K 1/4W 5%	1	R207	0062-251B3-1XXX
75K 1/4W 5%	2	R211,212	0062 269B3 1XXX
100K 1/4W 5%	1	R206	0062-275B3 1XXX
110K 1/4W 5%	1	R218	0062-277B3-1XXX
220K 1/4W 5%	1	R213	0062-291B3 1XXX
1M 1/4W 5%	1	R209	0062-323B3-1XXX
1.1M 1/4W 5%	1	R203	0062 325B3 1XXX
1.2M 1/4W 5%	1	R210	0062-327B3-1XXX
2M 1/4W 5%	1	R208	0062-337B3-1XXX
3.3M 1/4W 5%	1	R204	0062-347B3-1XXX
10M 1/4W 5%	1	R205	0062-371B3-1XXX
100ohm POT	2	VR101,102	0945-00814-0000
LM305 REG.	2	U1,2	0945-00813-0100
555	1	U6	0929-00810-4500
LM3900	1	U3	0945-00813-0200
4N28	1	U4	0945-00813-0300
A15F RECTIFIER	5	D101-105	0945-00804-0200
1N4001	3	D106,204,205	0945-00804-0300
1N4148	3	D201-203	0945-00804-0500
2N2905	2	Q102,105	0945-00808-0300
2N4401	1	Q201	0945-00804-0400
BATTERY 3.6VDC 60DEG C	1	B101	0017-00003-0377
FUSE 3/8A S-BLO	1	F1	0945-00808-0400
FUSE CLIP	2	FC1A,1B	0017-00003-0214
TIE WRAP	1	TW1	0945-00814-0300
FERRITE BEAD	2	FB1,2	0017-00009-0225
FERRITE MOUNTING HDW.	2	FBMH1,2	0017-00033-0139
22uH INDUCTOR	1	L101	0945-00814-0200
FUSE TAG	1		M051-00945-A004
SYSTEM TAG	1		M051-00945-A009
P.C.B.	1		A080-90412-D000
HEAT SINK ASS'Y (SEE HS ASS'Y DRAWING "** NOTE")	1	HSA1	A945-00008-0000
** 4-40 X 10 SLT RND	2	MH HSA 1A, 2A.	0017-00101-00727
** 4-40 HEX NUT	2	MH HSA 1E, 2E.	0017-00103-0002
** WSH 4-120-.250-018	4	MH HSA 1B,1D MH HSA 2B,2D	0017-00104-0071
3PIN P.C. MOUNT CONN. (MALE)	1	J6	0017-00021-0443
9PIN P.C. MOUNT CONN.(MALE)	1	J3	0017-00021-0425
15PIN P.C. MOUNT CONN.(FEMALE)	1	J4	0017-00021-0441
15PIN P.C. MOUNT CONN.(MALE)	1	J5	0017-00021-0440
22 AWG T & R BARE 2.5"	5	JW1-5	0151-00087-0000



PROJECT ENG: L. DEKKER		FULL	SATAN'S HOLLOW	MIDWAY MFG. CO.
	M.M.	1 PER.		FRANKLIN PARK, ILL.
5/3/82		POWER SUPPLY 125VA W/CKT SUPORT A082-90412-D000		M051-00945-D007

DESIGNATION LIST

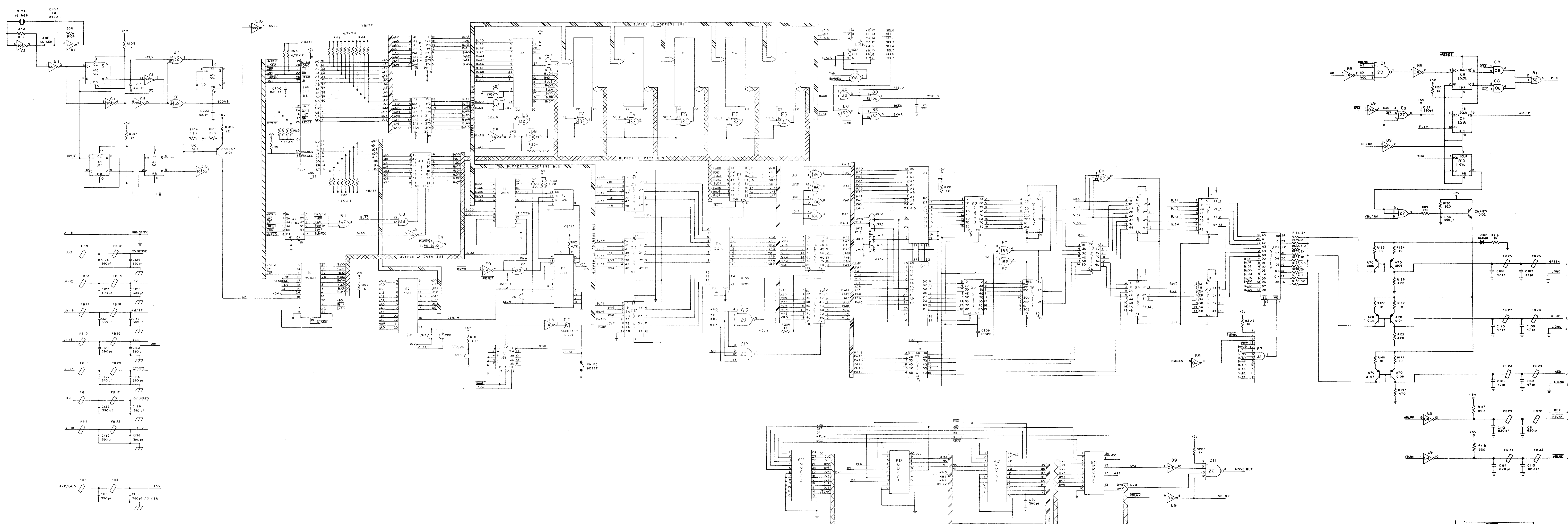
DESIGNATION	DESCRIPTION
C101	33PF AX. CER.
C102	0.1UF AX. CER.
C103	0.1UF MYLAR
C104	390PF AX.CER.
C105-C110	47 PF AX.CER.
C111-C114	820 PF. AX.CER.
C121-C137	390 PF. AX.CER.
C200	820 PF. AX.CER.
C201, C202	390 PF. AX.CER.
C203	100 PF AX.CER.
C204	470 PF. AX.CER.
C206	100 PF. AX. CER.
CP1	470UF 16V ELECT. AX.
CP2-CP7	0.01UF 50V AX.CER.
CP8	10UF 25V AX. TANT.
CP9-CP14	0.01UF 50V AX. CER.
CP15	470UF 16V ELECT. AX.
CP16-CP20	0.01UF 50V AX. CER.
CP21	10UF
CP22-CP28	0.01UF
CP29	10UF
CP30-CP37	0.01UF
CP38	10UF
CP39-CP50	0.01UF
CP51	10UF
CP52-CP57	0.01UF
CP58	470UF 16V ELECT.AX.
CP59-CP64	0.01UF
CP65	470UF
CP66	0.1UF 50V AX. CER.
R101	4.7K OHM 1/4W CRBN.
R102	1K OHM " "
R104	1.2KOHM " "
R105	220 OHM " "
R106	22 OHM " "
R107	1K OHM " "
R108	330 OHM " "
R109	1K OHM " "
R111	330OHM " "
R112	4.7KOHM " "
R116	1K OHM " "
R117, R118	560 OHM " "
R119	100 OHM " "
R120	820 OHM " "
R121	470 OHM " "
R123	510 OHM " "
R124	1K OHM " "
R125	2K OHM " "
R126, R127	10 OHM " "
R128	470 OHM " "
R129	1K OHM " "
R130	510 OHM " "
R131	2K OHM " "
R133, R134	10 OHM " "
R135	470 OHM " "
R136	510 OHM " "
R137	1K OHM " "
R138	2K OHM " "
R140, R141	10 OHM " "
R201	1K OHM " "
R203-R207	1K OHM " "
R208, R209	4.7KOHM " "
RM1	4.7K 6 PIN S.I.P.
RM2, RM3	4.7K 10 PIN S.I.P.
RM4	4.7K 6 PIN S.I.P.
D101	1N5817
D102	4148
Q101	2N4403
Q102	2N4123
Q103-Q108	MPSA70
A1	74LS161
A2	74LS367
A3	74LS245
A9	7474
A10	74S74
A11	74S04
A12	H-T
B1	74LS244
B2	CMOS RAM
B3	MK3882
B5	MK3880
B6	74LS244
B7	74LS133
B8	74LS32
B9	74S04
B10	74LS74
B11	74LS32
B12	V & H-T
C8	74LS08
C9	74LS74
C10	74S04
C11, C12	74LS20
D2	EPROM
D3	EPROM
D4	EPROM
D5	EPROM
D6	EPROM
D7	EPROM
D8	74LS04
D10-D12	74LS157
E3	NVR CONTROLLER
E4, E5	74LS32
E6	74LS138
E7	74LS86
E8	74LS27
E9	74LS04
F1	4053
F2	4017
F3	74LS245
F4, F5	74LS273
F6	6116
F7	74LS174
F8, F9	74LS157
F10	93419
G1	74LS153
G2	74LS273
G3	EPROM
G4	EPROM
G5	74LS273
G6	74LS153
G7	74LS86
G8	74LS174
G9, G10	74LS157
G11	CUSTOM IC
G12	V-T GEN.
FB7-FB32	FERRITE BEAD
ICSA12	8PIN IC SOCKET
ICSA12A	16PIN" "
ICSB2	24PIN" "
ICSB3	28PIN" "
ICSB5	40PIN" "
ICSB12	20PIN" "
ICSD2, D3, D4, D5, D6, D7	28PIN" "
ICSE3	20 PIN" "
ICSF6	24PIN" "
ICSF10	28PIN " "
	28PIN" "
ICSG11	20PIN" "
ICSG12	8PIN " "
ICSG12A	16PIN " "
J1A	KK156 RT. ANGLE 5PIN
J1	KK156 " " 14 PIN
J2A	KK100 RT. ANGLE 2 PIN
J2	KK100 " " 6 PIN
J3, J4, J5, J6, J7	KK100 " "24PIN
JW1-JW19	ZERO OHM RESISTORS
SW1	SWITCH P.C MOUNTING
XTAL	19,968 MHZ CRYSTAL
BB1, BB2	BUS BAR
J3, J4, J5, J6, J7	FLEX-PAC JUMPER
A080-90010-F000	SUPER CPU BOARD

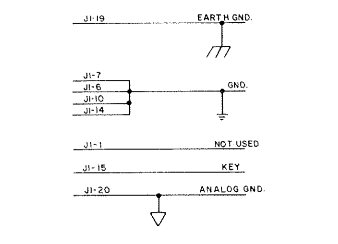


CROSS REFERENCE LIST

DESCRIPTION	QTY.	DESIGNATION	PART NOS.
33 PF AX.CER.	1	C101	0986-00800-0300
47 PF AX CER	6	C105-C110	0986-00800-2800
100 PF AX CER.	2	C203, C206	0986-00800-1000
390 PF AX CER	20	C104, C121-C137, C201, C202	0986-00800-3000
470 PF AX.CER.	1	C204	0986-00800-3502
820 PF AX.CER.	5	C111-C114, C200	0986-00800-3501
0.01UF 50V AX.CER.	56	CP2-CP7, CP9-CP14, CP16-CP20, CP22-CP28, CP30-CP37, CP39-CP50, CP52-CP57, CP59-CP64	0986-00800-2200
0.1MF 100V MYLAR	1	C103	0986-00800-0100
0.1MF 50V AX. CER.	2	C102, CP66	0986-00800-0200
10MF 25V AX. TANT	5	CP8, CP21, CP29, CP38, CP51	0986-00800-3400
470UF 16V AX. ELECT	4	CP1, CP15, CP58, CP65	0986-00800-3300
10 OHM 1/4W CRBN.	6	R126, R127, R133, R134, R140, R141	0062-051B3-1XXX
22 OHM " "	1	R106	0062-063B3-1XXX
100 OHM" "	1	R119	0062-110B3-1XXX
220 OHM" "	1	R105	0062-133B3-1XXX
330 OHM " "	2	R108, R111	0062-144B3-1XXX
470 OHM " "	3	R121, R128, R135	0062-156B3-1XXX
510 OHM " "	3	R123, R130, R136	0062-159B3-1XXX
560 OHM " "	2	R117, R118	0062-162B3-1XXX
820 OHM " "	1	R120	0062-174B3-1XXX
1K OHM " "	13	R102, R107, R109, R116, R124, R129, R137, R201, R203-R207	0062-179B3-1XXX
1.2K OHM" "	1	R104	0062-183B3-1XXX
2K OHM " "	3	R125, R131, R138	0062-193B3-1XXX
4.7K OHM" "	4	R101, R112, R208, R209	0062-211B3-1XXX
4.7K 6PIN S.I.P.	2	RM1, RM4	0986-00804-2400
4.7K 10 PIN S.I.P.	2	RM2, RM3	0986-00804-4600
1N5817	1	D101	0986-00801-0300
4148	1	D102	0986-00801-0100
2N4403	1	Q101	0986-00802-0200
2N4123	1	Q102	0986-00802-0100
MPSA70	6	Q103-Q108	0986-00802-0300
74S04	3	A11, B9, C10	0986-00803-0400
74LS04	2	D8, E9	0986-00803-1007
74LS08	1	C8	0986-00803-1006
74LS20	2	C11, C12	0986-00803-1004
74LS27	1	E8	0986-00803-9500
74LS32	4	B8, B11, E4, E5	0986-00803-0600
7474	1	A9	0986-00803-1009
74S74	1	A10	0986-00803-1500
74LS74	2	B10, C9	0986-00803-1005
74LS86	2	E7, G7	0986-00803-9900
74LS133	1	B7	0986-00803-1002
74LS138	1	E6	0986-00803-1900
74LS153	2	G1, G6	0986-00803-1000
74LS157	7	D10, D11, D12, F8, F9, G9, G10	0986-00803-9700
74LS161	1	A1	0986-00803-1003
74LS174	2	F7, G8	0986-00803-9800
74LS244	2	B1, B6	0986-00803-0800
74LS245	2	A3, F3	0986-00803-0900
74LS273	4	F4, F5, G2, G5	0986-00803-1001
74LS367	1	A2	0986-00803-2200
MK3380	1	B5	0986-00803-7800
MK3382	1	B3	0986-00803-7700
4017	1	F2	0986-00803-8700
4053	1	F1	0986-00803-2000
CMOS RAM	1	B2	0986-00803-8100
6116	1	F6	0986-00803-1008
93419	1	F10	0986-00803-9600
H-T GEN.	1	A12	0986-00803-8900
V-T GEN.	1	G12	0986-00803-9000
V & H GEN.	1	B12	0986-00803-9100
MISC. CUSTOM	1	G11	0986-00803-9200
NVR CONTROLLER	1	E3	0986-00804-3200
EPROM	1	D2 (ROM/EPROM OPTIONS KIT)	0337-00803-0001
EPROM	1	D3 (ROM/EPROM OPTIONS KIT)	
EPROM	1	D4 (ROM/EPROM OPTIONS KIT)	
EPROM	1	D5 (ROM/EPROM OPTIONS KIT)	
EPROM	1	D6 (ROM/EPROM OPTIONS KIT)	
EPROM	1	D7 (ROM/EPROM OPTIONS KIT)	
EPROM	1	G3 (ROM/EPROM OPTIONS KIT)	
EPROM	1	G4 (ROM/EPROM OPTIONS KIT)	
8 PIN IC SOCKET	2	ICSA12, ICSG12	0986-00804-3600
16PIN " "	2	ICSA12A, ICSG12A	0986-00804-3700
20PIN " "	3	ICSB12, ICSE3, ICSG11	0986-00804-3800
24 PIN" "	2	ICSB2, ICSF6	0986-00804-3400
28 PIN " "	10	ICSB3, ICSD2, ICSD3, ICSD4, ICSD5, ICSD6, ICSD7, ICSF10, ICSG3, ICSG4,	0986-00804-3900
40PIN " "	1	ICSB5	0986-00804-3500
FERRITE BEADS	26	FB7-FB32	0316-00804-0002
KK100 RT. ANGLE 2 PIN CONN.	1	J2A	0986-00804-4200
KK100 RT. ANGLE 6 PIN CONN.	1	J2	0986-00804-4300
KK156 RT. ANGLE 5PIN CONN.	1	J1A	0986-00804-4400
KK156 RT. ANGLE 14 PIN CONN.	1	J1	0986-00804-4500
KK100 RT. ANGLE 24 PIN CONN.	5	J3, J4, J5, J6, J7	0986-00804-4700
ZERO OHM RESISTORS	19	JW1-JW19	0986-00804-4000
SWITCH P.C. MOUNTING	1	SW1	0986-00804-3100
19,968 MHZ CRYSTAL	1	XTAL	0986-00804-4900
BUS BAR	2	BB1, BB2	0986-00804-4100
FLEX-PAC	5	J3, J4, J5, J6, J7	0986-00804-4800

PROJECT ENG A. GOSH		USED ON WACKO	Bally / MIDWAY MFG. CO. FRANKLIN PK ILL
HEAT TREAT	SCALE FULL	NO. REQ'D 1 PER	REVISIONS
DRN	MAT'L	SUPER CPU BOARD ASSY DWG. A082-90010-G000	PART NO. M051-00337-A005
CKD.	FINISH		
DATE 02/14/83			

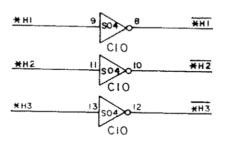




72 PIN TEST CONNECTOR						J3	J4	J5	J6	J7	J2
1	L GND	25	uA0	49	uNMI	1 L GND	1 A GND	1 L GND	1 L GND	1 *H2	1 RED
2	+5V	26	uA1	50	uINT	2 L GND	2 A GND	2 L GND	2 BuRD	2 L GND	2 L GND
3	L GND	27	uA2	51	uMI	3 L GND	3 BuA7	3 L GND	3 L GND	3 H0	3 GREEN
4	+5V	28	uA3	52	uBUSACK	4 +5V	4 BuA6	4 +5V	4 BuD0	4 H1	4 L GND
5	+12V	29	uA4	53	uRD	5 +5V	5 BuA5	5 +5V	5 BuD1	5 H2	5 BLUE
6	N.U.	30	uA5	54	uWR	6 +5V	6 BuA4	6 +5V	6 BuD2	6 H3	6 L GND
7	+12V	31	uA6	55	uRESET	7 N.U.	7 BuA3	7 SCOMB	7 BuD3	7 H4	7 KEY
8	VBATT	32	uA7	56	TΦ	8 N.U.	8 BuA2	8 CLK	8 BuD4	8 H5	8 HBLNK
9	uD0	33	DISDOG	57	CLKCTL	9 N.U.	9 BuA1	9 HCLK	9 BuD5	9 H6	9 VBLNK
10	uD1	34	FAIL	58	uHALT	10 BuD0	10 BuA0	10 HCLK	10 BuD6	10 H7	
11	uD2	35	FLIP	59	uWAIT	11 BuD1	11 +12V	11 RSEL0	11 BuD7	11 H8	
12	uD3	36		60	HBLNK	12 BuD2	12 +12V	12 +5V SENSE	12 L GND	12 L GND	
13	uD4	37	uIORQ	61	VBLNK	13 BuD3	13 uWAIT	13 N.U.	13 BuA0	13 VID 0	
14	uD5	38	uMREQ	62		14 BuD4	14 BuIORQ	14 MOVE BUF	14 BuA1	14 VID 1	
15	uD6	39	uBUSREQ	63	L GND	15 BuD5	15 N.U.	15 634	15 BuA2	15 VID 2	
16	uD7	40	uRFSH	64	RED	16 BuD6	16 BuRD	16 DV0	16 BuA3	16 VID 3	
17	VID 0	41	uA8	65	L GND	17 BuD7	17 BuMR	17 DV1	17 BuA4	17 WSEL0	
18	VID 1	42	uA9	66	GREEN	18 N.U.	18 N.U.	18 DV2	18 BuA5	18 L GND	
19	VID 2	43	uA10	67	L GND	19 FLIP	19 +5V	19 DV3	19 BuA6	19 +5V	
20	VID 3	44	uA11	68	BLUE	20 uRESET	20 +5V	20 DV4	20 BuA7	20 +5V	
21	MOVE BUF	45	uA12	69	L GND	21 N.U.	21 +5V	21 DV5	21 BuA8	21 +5V	
22	INT 1	46	uA13	70	+5V	22 N.U.	22 L GND	22 DV6	22 L GND	22 L GND	
23	INT 3	47	uA14	71	L GND	23 N.U.	23 L GND	23 DV7	23 *H0	23 L GND	
24		48	uA15	72	+5V	24 N.U.	24 L GND	24 DV8	24 *H1	24 L GND	

NOTES

A = ANALOG
E = EARTH
L = LOGIC
N.U. = NOT USED

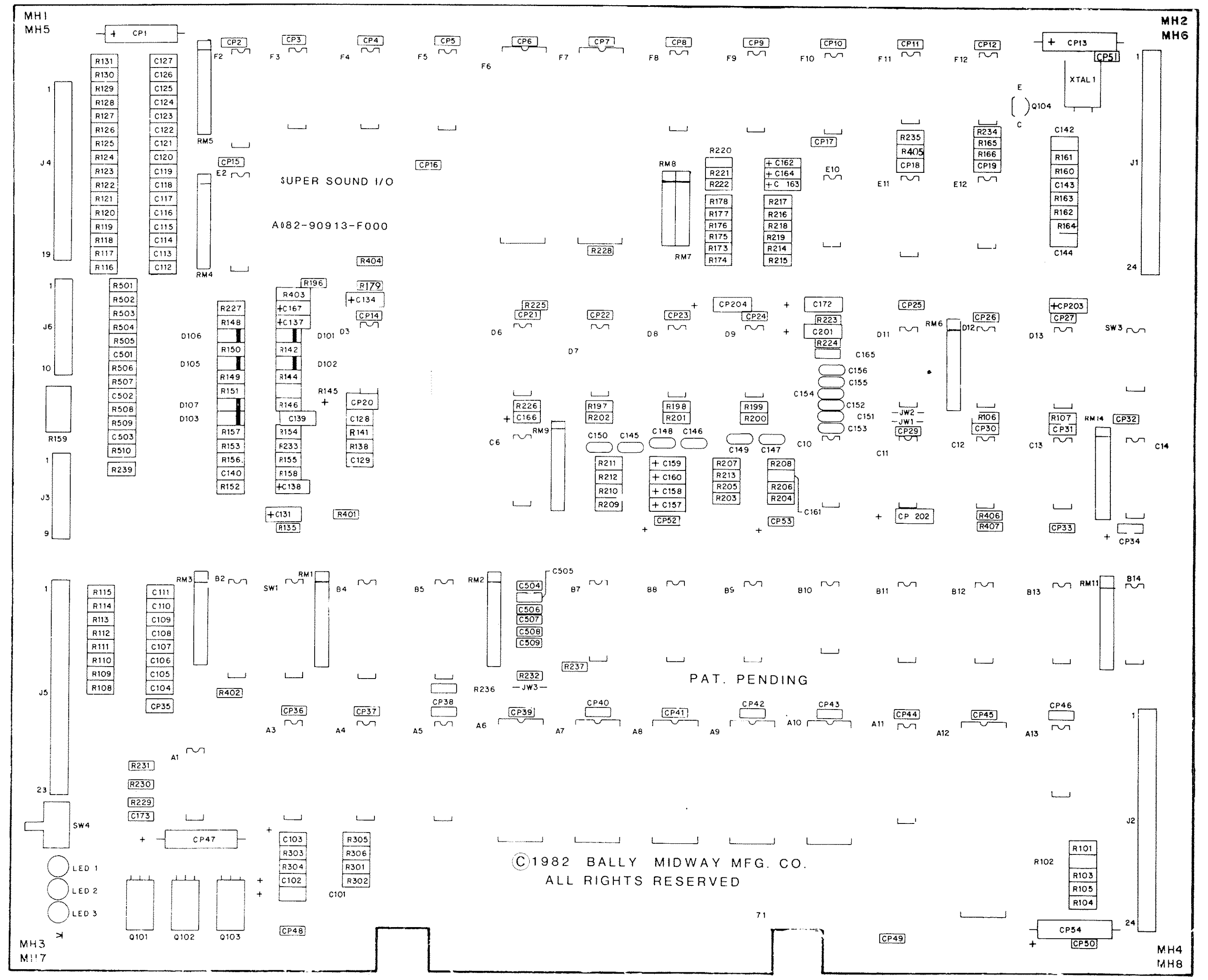


PROJECT ENG: A. GHOSH		USED ON WACKO	Bally / MIDWAY MFG. CO. FRANKLIN PK ILL.
DO NOT SCALE DWG	SCALE NONE	NO. REQ'D 1 (ONE)	
DIM. TOLERANCES UNLESS SPECIFIED	DATE 02/14/83	SCHEMATIC DRWG SUPER CPU A082-90010-G000	PART NO. M051-00986-G014

DESIGNATION LIST

DESIGNATION	DESCRIPTION
C101–C103	10MF 25V AX.TANT.
C104–C127	.1MF 50V AX. CER.
C128–C129	47PF 50V AX. CER.
C131	10 MF 25V AX. TANT.
C134	1MF 20V AX. TANT.
C137	1MF " " "
C138	10MF 25V AX. TANT.
C139	.047 MF 100V MYLAR
C140	.01MF 50V AX. CER.
C142	100PF 50V AX. CER.
C143	.1MF 50V AX. CER.
C144	33PF 50V AX. CER.
C145–C156	.0022MF 100V 10% MYLAR
C157–C159	1MF 20V AX. TANT.
C161	330 PF 50V AX. CER.
C162–C164	1MF 20V AX. TANT.
C165	330PF 50V AX. CER.
C166, C167	10MF 25V AX. TANT.
C172	10MF 25V AX. TANT.
C173	.01MF 50V AX. CER.
C501–C509	.1MF 50V AX. CER.
CP1	470MF 16V AX. ELECT.
CP2–CP12	.01MF 50V AX. CER.
CP13	470MF 16V AX. ELECT.
CP14–CP19	.01MF 50V AX. CER.
CP20	10MF 25V AX. TANT.
CP21–CP27	.01MF 50V AX. CER.
CP29–CP33	.01MF 50V AX. CER.
CP34	10MF 25V AX TANT
CP35–CP46	.01MF 50V AX. CER.
CP47	470MF 16V AX. ELECT.
CP48–CP51	.01MF 50V AX. CER.
CP52, CP53	10MF 25V AX. TANT.
CP54	470MF 16V AX. ELECT.
CP202–CP204	10MF 25V AX. TANT.
R101–R107	4.7K OHM 1/4W 5% CARBON
R108–R131	220 " " " "
R135	33K " " " "
R138	180K " " " "
R141	180K " " " "
R142	100K " " " "
R144, R145	620K " " " "
R146	10K " " " "
R148	100K " " " "
R149, R150	620K " " " "
R151	10K " " " "
R152	1MEG. " " " "
R153	1K " " " "
R154	1MEG " " " "
R155, R156	10K " " " "
R157, R158	1.2K " " " "
R160, R161	330 " " " "
R162	220 " " " "
R163	1.2K " " " "
R164	22 " " " "
R165, R166	4.7K " " " "
R173–R178	5.6K " " " "
R179	24K " " " "
R196	24K " " " "
R197–R202	5.6K OHM 1/4W 5% CARBON
R203–R208	33K " " " "
R209–R211	13K " " " "
R213	27K " " " "
R214–R219	33K " " " "
R220–R222	13K " " " "
R224	27K " " " "
R225, R226	4.7K " " " "
R227	1K " " " "
R228	4.7K " " " "
R231	300 " " " "
R232	4.7K " " " "
R233	3K " " " "
R234, R235	4.7K " " " "
R239	100 " " " "
R301–R306	2.7K " " " "
R401	1K " " " "
R402	4.7K " " " "
R403–R404	33K " " " "
R405–R407	4.7K " " " "
R501–R509	220 " " " "
R510	2.7K " " " "

DESIGNATION	DESCRIPTION
RM1	4.7K OHM 10 PIN S.I.P.
RM2-RM5	2.7K " 10 PIN S.I.P.
RM7	4.7K " 8 PIN S.I.P.
RM8	820 " 8 PIN S.I.P.
RM9	1.8K " 10 PIN S.I.P.
RM14	4.7K " 10 PIN S.I.P.
D101–D103	IN4148
D105-D107	IN4148
Q101-Q103	TIP110
Q104	2N4403
ICA1	7406
" A4	74LS273
" A5	74LS374
" A6	1K X 8 RAM
" A7	ROM/EPROM 0
" A8	" " 1
" A9	" " 2
" A10	" " 3
" A11	74LS245
" A12	Z–80 CPU
" A13	74LS08
" B2, B4, B5	74LS244
" B7, B8	74LS138
" B9	74LS670
" B10	74LS32
" B11	74LS670
" B12, B13	74LS138
" B14	74LS174
" C6	7407
" C10	MC3403
" C11	74LS04
" C12	MC14024
IC C13	7427
" C14	74LS367
" D3	LM3900
" D6	74LS02
" D7-D9	MC14016
" D11	74190
" D12	PROMSB2A
" D13	74166
" E2	74LS244
" E10	MC3403
" E11	74161
" E12	74126
" F2	74LS244
" F3–F5	74LS191
" F6, F7	AY-3-8910
" F8–F10	74LS191
" F11	7474
" F12	74S04
ICSA6–ICSAI0	24PIN IC SOCKET
" A12	40PIN" "
" D12	16 PIN" "
" F6, F7	40PIN" "
J1, J2	24 PIN KK100 RT. ANGLE CONN.
J3	9 PIN KK100 RT. ANGLE W/ 4 OMIT
J4	19 PIN KK100 RT.ANGLE W/ 14 OMIT
J5	23 PIN KK100 RT.ANGLE W/ 19 OMIT
J6	10 PIN KK100 RT.ANGLE W/8 OMIT
JW1, JW2	JUMPER WIRE
LED 3	YELLOW LED
SW1	10 POSITION DIP
SW3	8 " "
SW4	PUSH BUTTON S.W.
XTAL 1	16 MHZ CRYSTAL
MHQ101-MHQ103	SNAP
MH1 – MH4	SPACER
MH5 – MH8	6-32 X 6 M.S.
A080-90913-F000	SUPER SOUND I/O BOARD

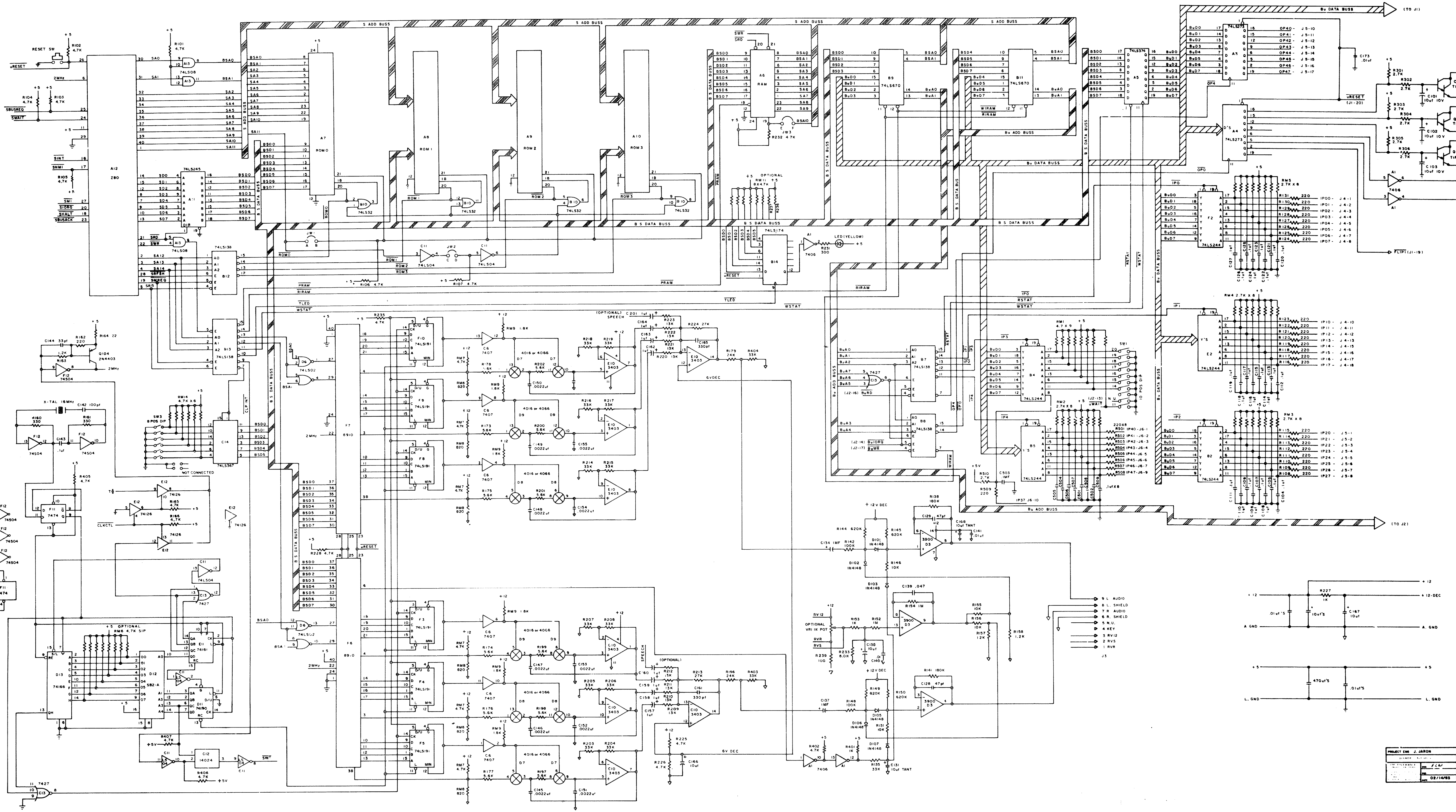


CROSS REFERENCE LIST

DESCRIPTION	QTY	DESIGNATION	PART NOS.
33PF 50V 5% AX.CER	1	C144	0986-00800-0900
47 PF 50V AX.CER.	2	C128, C129	0986-00800-2800
100PF 50V 5% AX.CER.	1	C142	0986-00800-1000
330PF 50V AX. CER.	2	C161, C165	0986-00800-1300
.0022MF 100V 10% MYLAR	12	C145-C156	0986-00800-1200
.047MF 100V MYLAR	1	C139	0986-00800-2600
.01MF 50V AX. CER.	47	CP2-CP12, CP14-CP19, CP21-CP27, CP29-CP33, CP35-CP46, CP48-CP51, C140, C173	0986-00800-2000
.1MF 50V AX. CER.	34	C104-C127, C143, C501-C509	0986-00800-1100
1MF 20V AX. TANT.	8	C134, C137, C157-C159, C162-C164	0986-00800-1400
10MF 25V AX. TANT.	15	CP34, CP52-CP53, CP202-CP204, CP20, C101-C103, C131, C138, C166, C167, C172	0986-00800-0700
470 MF 16V AX. ELECT.	4	CP1, CP13, CP47, CP54	0986-00800-2700
22 OHM 1/4W 5% CARBON	1	R164	0062-063B3-1XXX
100 " " " "	1	R239	0062-110B3-1XXX
220 " " " "	34	R108-R131, R162, R501-R509	0062-133B3-1XXX
300 " " " "	1	R231	0062-141B3-1XXX
330 " " " "	2	R160-R161	0062-144B3-1XXX
1K " " " "	3	R153, R227, R401	0062-179B3-1XXX
1.2K " " " "	3	R157, R158, R163	0062-183B3-1XXX
2.7K " " " "	7	R301-R306, R510	0062-199B3-1XXX
3K " " " "	1	R233	0062-201B3-1XXX
4.7K " " " "	19	R101-R107, R165, R166, R225, R226, R228, R232, R234, R235, R402, R405-R407	0062-211B3-1XXX
5.6K " " " "	12	R173-R178, R197-R202	0062-215B3-1XXX
10K " " " "	4	R146, R151, R155, R156	0062-227B3-1XXX
13K " " " "	6	R209-R211, R220-R222	0062-233B3-1XXX
24K " " " "	2	R179, R196	0062-245B3-1XXX
27K " " " "	2	R213, R224	0062-247B3-1XXX
33K " " " "	15	R135, R203-R208, R214--R219, R403-R404	0062-251B3-1XXX
100K " " " "	2	R142, R148	0062-275B3-1XXX
180K " " " "	2	R138, R141	0062-287B3-1XXX
620K " " " "	4	R144, R145, R149, R150	0062-313B3-1XXX
1MEG. " " " "	2	R152, R154	0062-323B3-1XXX
820 OHM 8PIN S.I.P.	1	RM8	0986-00805-0800
1.8K " 10PIN S.I.P.	1	RM9	0986-00805-0600
2.7K " 10PIN S.I.P.	4	RM2 – RM5	0986-00805-0500
4.7K " 8 PIN S.I.P.	1	RM7	0986-00805-0400
4.7K " 10PIN S.I.P.	2	RM1, RM14	0986-00805-0300
IN4148	6	D101–D103, D105–D107	0986-00801-0200
2N4403	1	Q104	0986-00802-0500
TIP 110	3	Q101–Q103	0986-00802-0400
74LS02	1	D6	0986-00803-7400
74LS04	1	C11	0986-00803-6900
74S04	1	F12	0986-00803-6600
7406	1	A1	0986-00803-7600
7407	1	C6	0986-00803-5900

DESCRIPTION	QTY	DESIGNATION	PART NOS.
74LS08	1	IC A13	0986-00803-7300
7427	1	" C13	0986-00803-7200
74LS32	1	" B10	0986-00803-6100
7474	1	" F11	0986-00803-6700
74126	1	" E12	0986-00803-6800
74LS138	4	" B7, B8, B12, B13	0986-00803-6500
74161	1	" E11	0986-00803-5100
74166	1	" D13	0986-00803-5300
74LS174	1	" B14	0986-00803-7500
74190	1	" D11	0986-00803-9400
74LS191	6	" F3-F5, F8-F10	0986-00803-5600
74LS244	5	" B2, B4, B5, E2, F2	0986-00803-4800
74LS245	1	" A11	0986-00803-6400
74LS273	1	" A4	0986-00803-4700
74LS367	1	" C14	0986-00803-7000
74LS374	1	" A5	0986-00803-4600
74LS670	2	" B9, B11	0986-00803-6300
AY-3-8910	2	" F6, F7	0986-00803-8500
LM3900	1	" D3	0986-00803-4900
MC3403	2	" C10, E10	0986-00803-5000
MC14016	3	" D7-D9	0986-00803-6200
MC14024	1	" C12	0986-00803-7100
PROM SB2-A	1	" D12	0986-00803-8200
RAM 1K X 8	1	" A6	0986-00803-8000
ROM/EPROM 0	1	" A7 } EPROM/ROM OPTIONS KIT	0337-00803-0002
" " 1	1	" A8 } EPROM/ROM OPTIONS KIT	
" " 2	1	" A9 } EPROM/ROM OPTIONS KIT	
" " 3	1	" A10 } EPROM/ROM OPTIONS KIT	
Z-80 (3880)	1	" A12	0986-00803-5500
16 PIN IC SOCKET	1	ICSD12	0986-00804-1400
24 PIN " "	5	ICSA6 – ICSA10	0986-00804-1600
40 PIN " "	3	ICSA12, ICSF6, ICSF7	0986-00804-1500
9 PIN KK100 RT. ANGLE W/4 OMIT	1	J3	3000-16366-0901
10 PIN KK100 RT. ANGLE W/8 OMIT	1	J6	3000-16366-1001
19 PIN KK100 RT.ANGLE W/14 OMIT	1	J4	3000-16366-1901
23 PIN KK100 RT.ANGLE W/19 OMIT	1	J5	3000-16366-2301
24 PIN KK100 RT.ANGLE	2	J1, J2	0986-00804-4700
JUMPER WIRE	2	JW1, JW2	0986-00804-4000
YELLOW LED	1	LED 3	0986-00804-2000
8 POSITION DIP SW.	1	SW3	0986-00805-0900
10 POSITION DIP SW.	1	SW1	0986-00805-1000
PB SWITCH	1	SW4	0986-00804-1700
16 MHZ CRYSTAL W/3RD LEAD	1	XTAL 1	0986-00805-1100
SNAPS	3	MHQ101 – MHQ103	0017-00007-0134
SPACER	4	MH1 – MH4	0986-00702-00XF
6-32 X 6 M.S.	4	MH5 - MH8	0017-00101-0153
SUPER SOUND I/O BOARD	1		A080-90913-F000

PROJECT ENG: C. MEDNICK		USED ON WACKO	Bally / MIDWAY FRANKLIN PK.
DO NOT SCALE DWG	HEAT TREAT	SCALE FULL	NO. REQ'D PER 1
DIM. TOLERANCES UNLESS SPECIFIED	DRN. RLW	MAT'L.	
	CKD.	FINISH	ASSEMBLY DRAWING SUPER SOUND I/O P.C. BOARD A082-90913-F000
	DATE 02/14/83		M051 – 00337 – A006



2 X 24 PIN RIBBON CABLE

J1-1,2,3-L. GND
J1-4,5,6- +5
J1-7,8,9-NOT USED
J1-10-BuD0
J1-11-BuD1
J1-12-BuD2
J1-13-BuD3
J1-14-BuD4
J1-15-BuD5
J1-16-BuD6
J1-17-BuD7
J1-18-NOT USED
J1-19-FLIP1
J1-20-uRESET
J1-21,22,23,24-NOT USED

J2-1,2-A. GND
J2-3-BuA7
J2-4-BuA6
J2-5-BuA5
J2-6-BuA4
J2-7-BuA3
J2-8-BuA2
J2-9-BuA1
J2-10-BuA0
J2-11,12-+12
J2-13-uWAIT
J2-14-BuIORQ
J2-15-NOT USED
J2-16-BuRD
J2-17-BuWR
J2-18-NOT USED
J2-19,20,21-+5
J2-22,23,24 - L. GND

GND- J4-9
KEY- J4-14
GND- J4-19
GND- J5-9
KEY- J5-19
GND- J5-18
KEY- J6-9

72 PIN TEST CONN

1 - L.GND	37 - SA4
2 - +5	38 - SA5
3 - L.GND	39 - SA6
4 - +5	40 - SA7
5 - +12	41 - SA8
6 - A.GND	42 - SA9
7 - +12	43 - SA10
8 - NOT USED	44 - SA11
9 - BuD0	45 - SA12
10 - BuD1	46 - SA13
11 - BuD2	47 - SA14
12 - BuD3	48 - SA15
13 - BuD4	49 - SNMI
14 - BuD5	50 - SINT
15 - BuD6	51 - SM1
16 - BuD7	52 - SBUSACK
17 - SD0	53 - BuRD
18 - SD1	54 - BuWR
19 - SD2	55 - uRESET
20 - SD3	56 - T8
21 - SD4	57 - CLKCTL
22 - SD5	58 - SRD
23 - SD6	59 - SWR
24 - SD7	60 - SIORQ
25 - BuA0	61 - BuIORQ
26 - BuA1	62 - SMREQ
27 - BuA2	63 - SBUSREQ
28 - BuA3	64 - SRFSH
29 - BuA4	65 - L.GND
30 - BuA5	66 - SWAIT
31 - BuA6	67 - L.GND
32 - BuA7	68 - SHALT
33 - SA0	69 - NOT USED
34 - SA1	70 - +5
35 - SA2	71 - L.GND
36 - SA3	72 - +5

* USED ON VERSION W/PANNING
NOT USED ON VERSION W/O/PANNING

** NOT USED ON VERSION W/PANNING
USED ON VERSION W/O/PANNING

NOTE

ROM JUMPER OPTIONS

EPROM/ROM	JW1	JW2
2532 COMPATABILITY		X
2732 COMPATABILITY	X	

REVISIONS

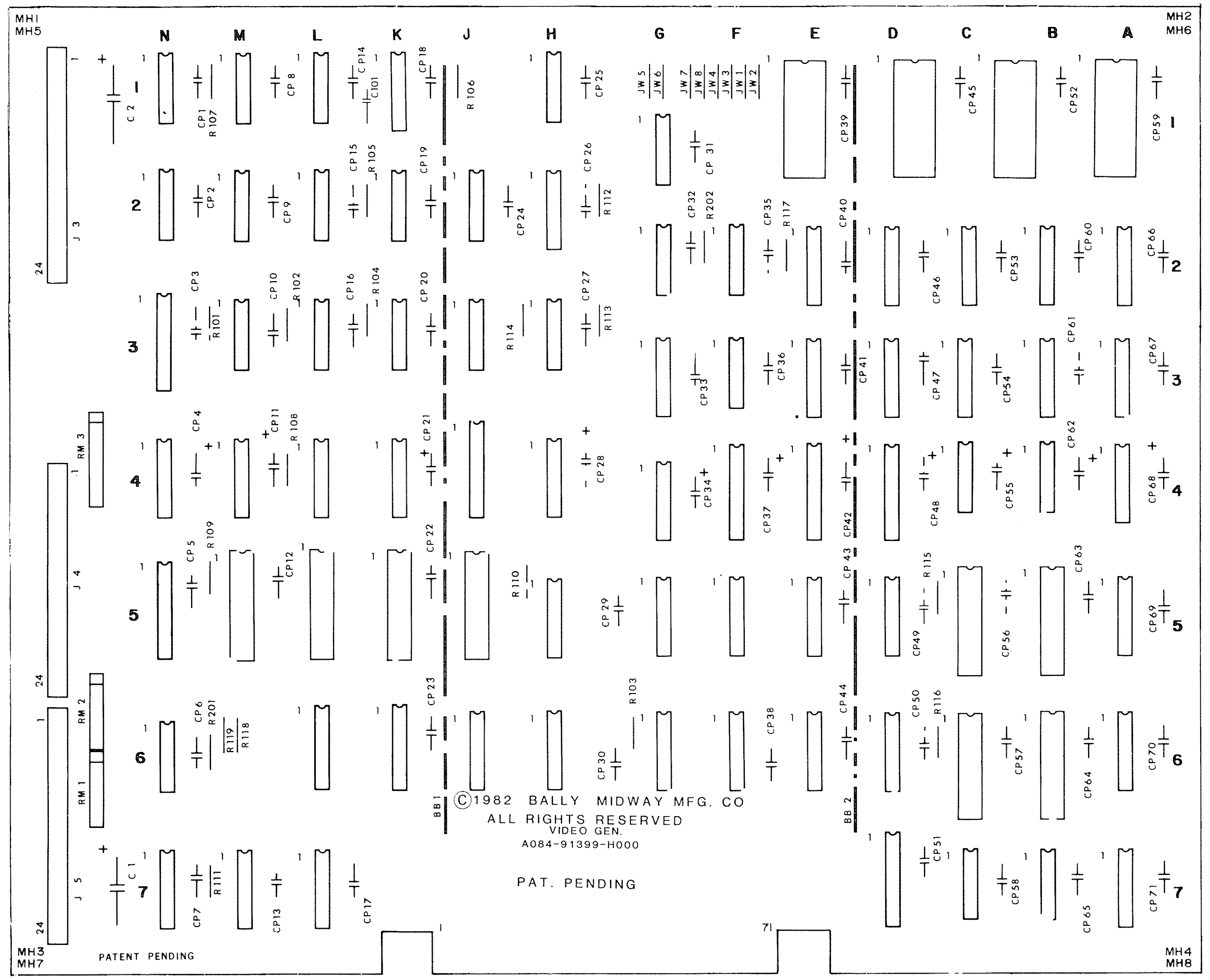
PROJECT ENG J. JARON	USED ON WACKO	Bally/MIDWAY MFG. CO. FRANKLIN PK ILL
DATE 02/14/83	NO REQ'D 1 PER	
SCHEMATIC DRAWING SUPER SOUND I/O A084-90913-F000		PART NO M051-00986-F016

DESIGNATION LIST

DESIGNATION	DESCRIPTION
C1,2	100 µf AX. ELECT
C101	100 pf AX. CER.
CP1-3, 5-10, CP12-20,22-27, CP29-33,35,36, CP38-41,43-47, CP49-54,56-61, CP63-67,69-71.	.01µf AX. CER.
CP4,11,21,28,34, CP37,42,48,55, CP62,68.	10µf 25V AX. TANT.
R101-119,201,202.	1K 1/4W 5%
RM1,2	8PIN 1K SIP
RM 3	10PIN 1K SIP
IC A 1	EPROM
IC A 2	74LS157
IC A 3	74LS157
IC A 4	74LS157
IC A 5	74LS157
IC A 6	74LS157
IC A 7	74LS157
IC B 1	EPROM
IC B 2	74LS194
IC B 3	74LS194
IC B 4	74LS32
IC B 5	422
IC B 6	422
IC B 7	74LS32
IC C 1	EPROM
IC C 2	74LS194
IC C 3	74LS194
IC C 4	74LS32
IC C 5	422
IC C 6	422
IC C 7	74LS32

DESIGNATION	DESCRIPTION
IC D 1	EPROM
IC D 2	74LS194
IC D 3	74LS194
IC D 4	74LS273
IC D 5	74LS157
IC D 6	74LS157
IC D 7	74LS273
IC E 2	74LS194
IC E 3	74LS194
IC E 4	74LS374
IC E 5	74LS157
IC E 6	74LS157
IC F 2	7400
IC F 3	74S04
IC F 4	74LS374
IC F 5	74LS157
IC F 6	74LS157
IC G 1	74LS86
IC G 2	74LS20
IC G 3	74LS283
IC G 4	74LS283
IC G 5	74LS283
IC G 6	74LS157
IC H 1	74LS86
IC H 2	74174
IC H 3	74S74
IC H 4	74175
IC H 5	74174
IC H 6	74LS157
IC J 2	7430
IC J 3	7430
IC J 4	74LS273
IC J 5	422
IC J 6	74LS157
IC K 1	74161
IC K 2	7430
IC K 3	7474
IC K 4	74161
IC K 5	422
IC K 6	2114-2

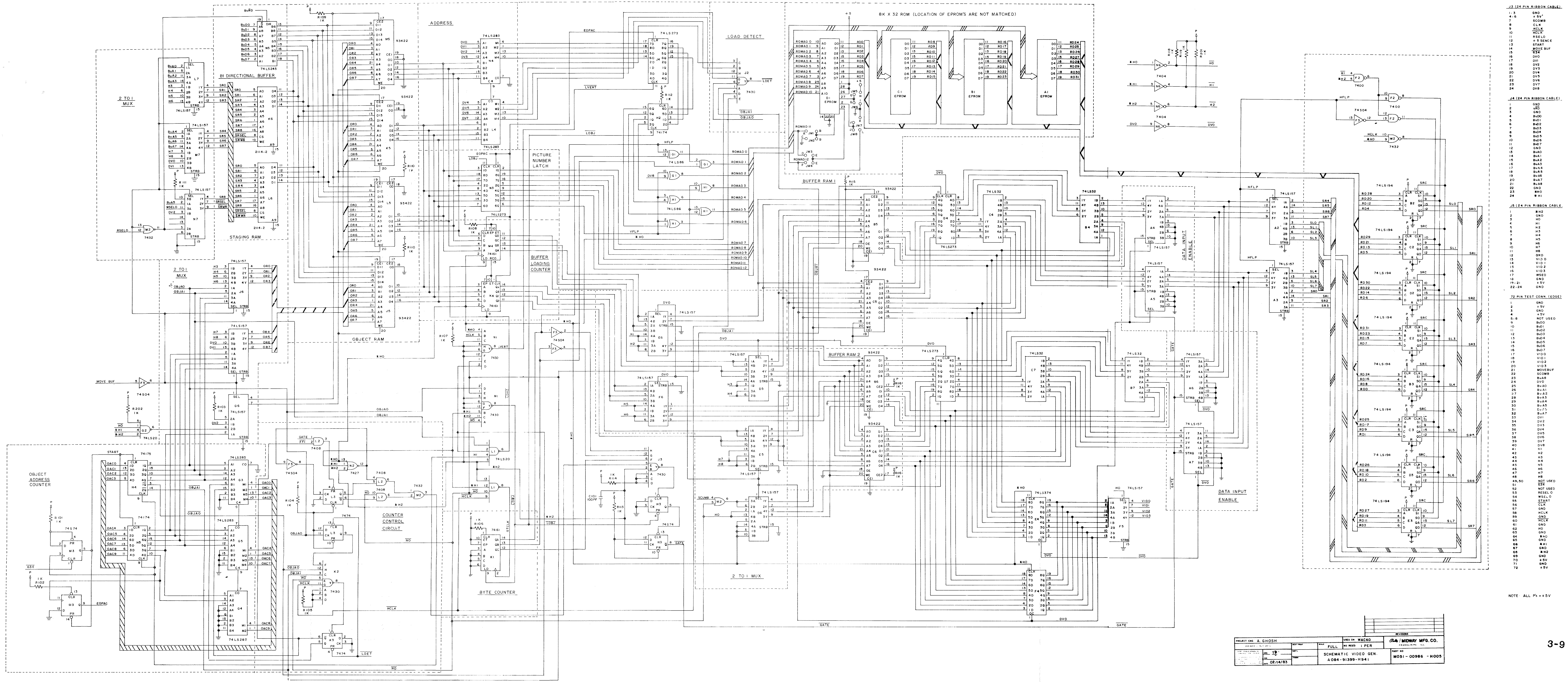
DESIGNATION	DESCRIPTION
IC L 1	74LS20
IC L 2	7408
IC L 3	7474
IC L 4	74LS283
IC L 5	422
IC L 6	2114-2
IC L 7	74LS157
IC M 1	7430
IC M 2	7432
IC M 3	74S74
IC M 4	74161
IC M 5	422
IC M 7	74LS157
IC N 1	7430
IC N 2	7427
IC N 3	74LS273
IC N 4	74LS283
IC N 5	74LS245
IC N 6	7404
IC N 7	74LS157
ICS A1,B1,C1,D1.	28PIN IC SOCKET
ICS B5,6,C5,6, J5,K5,L5,M5.	22PIN IC SOCKET
ICS K6,L6.	18PIN IC SOCKET
J3,4,5	24 PIN RIGHT ANGLE CONN.
JW1-JW8	JUMPER WIRE
BB1,2	BUSS BAR
PCMH1-4	PC BD SPACER
PCMH5-8	PC MTG SCREW
A080-91399-H000	VID.GEN. PC



CROSS REFERENCE LIST

DESCRIPTION	Q'TY	DESIGNATION	PART NO.
100 Pf 50V AX. CER.	1	C101	0986-00800-1000
.01 µf 50V AX. CER.	60	CP1-3, CP5-10, CP12-20, CP22-27, CP29-33, CP35, 36, CP38-41, CP43-47, CP49-54, CP56-61, CP63-67, CP69-71.	0986-00800-2500
10 µf 25V AX. TANT.	11	CP4, 11, 21, 28, 34, 37, CP42, 48, 55, 62, 68.	0986-00800-2400
100 µf 25V AX. ELECT.	2	C1, 2.	0986-00800-1800
1K 1/4W CRBN. FLM.	21	R101-119, 201, 202.	0062-17983-1XXX
1K 8 PIN SIP	2	RM1, 2.	0986-00804-1100
1K 10 PIN SIP	1	RM3	0986-00804-1000
2114-2	2	K6, L6.	0986-00803-2300
7400	1	F2	0986-00803-2800
7404	1	N6	0986-00803-8300
74S04	1	F3	0986-00803-3100
7408	1	L2	0986-00803-3200
74LS20	2	G2, L1	0986-00803-3400
7427	1	N2	0986-00803-3500
7430	5	J2, J3, K2, M1, N1	0986-00803-3600
7432	1	M2	0986-00803-4400
74LS32	4	B4,7, C4,7,	0986-00803-3700
7474	2	K3, L3	0986-00803-4500
74S74	2	H3, M3	0986-00803-4100
74LS86	2	G1, H1	0986-00803-4200
74LS157	18	A2,3,4,5,6,7, D5,6, E5,6, F5,6, G6, H6, J6, L7, M7, N7.	0986-00803-2400
74161	3	K1, K4, M4.	0986-00803-2500
74174	2	H2,5	0986-00803-2600
74175	1	H4	0986-00803-2700
74LS194	8	B2,3, C2,3, D2,3, E2,3.	0986-00803-2900
74LS245	1	N5	0986-00803-3000
74LS273	4	D4,7, J4, N3	0986-00803-3800
74LS283	5	G3,4,5 L4, N4,	0986-00803-3900
74LS374	2	E4, F4	0986-00803-4000
93422	4	J5, K5, L5, M5	0986-00804-0800
93422	4	B5, B6, C5, C6	0986 00803-1010
EPROM	1	A1 (VG A)	ROM/EPROM OPTIONS KIT 0337-00803-0003
EPROM	1	B1 (VG B)	
EPROM	1	C1 (VG C)	
EPROM	1	D1 (VG D)	
JUMPER WIRE	8	JW1-8	0986-00805-0200
BUSS BAR	2	BB1, 2	0986-00804-0900
P.C. BOARD	1		A080-91399-E000
24 PIN RIGHT ANGLE CONN.	3	J3,4,5	0986-00804-4700
28 PIN SOCKET	4	ICS A1, B1, C1, D1	0986-00804-0300
22 PIN SOCKET	8	ICS B5,6, C5,6, J5, K5, L5, M5	0986-00804-0700
18 PIN SOCKET	2	ICS K6 L6	0986-00804-0600
PC BD SPACER	4	PCMH1-PCMH4	0986-00701-00XF
PC MTG SCREW	4	PCMH5-PCMH8	0017-00101-0339

PROJECT ENG: A. GOSH		USED ON WACKO	Bally / MIDWAY MFG. CO. FRANKLIN PK., ILL.
DO NOT SCALE DWG	HEAT TREAT	SCALE FULL	NO. REQ'D ONE PER
DIM. TOLERANCES UNLESS SPECIFIED	DRN.	MAT'L.	VIDEO GENERATOR P.C. ASSY DWG A082-91399-H000
	CKD.	FINISH	PART NO. M051-00337-A007
	DATE 02/14/83		

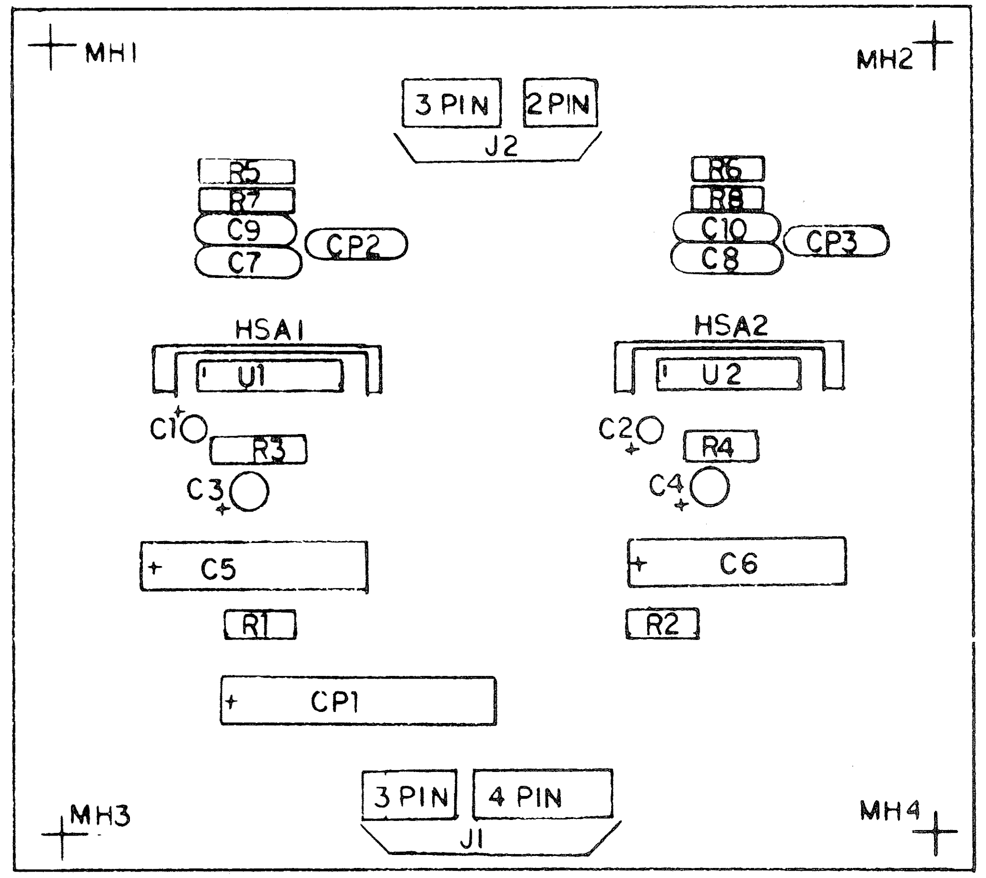


REVISIONS

PROJECT ENG A. GHOSH		USED ON WACKO	Bally / MIDWAY MFG. CO. FRANKLIN PK. ILL
DO NOT SCALE DWG	SCALE FULL	NO. REQ'D 1 PER	
DATE 02/14/83	SCHEMATIC VIDEO GEN. A084-91399-H941		PART NO M051-00986 -H005

DESIGNATION LIST

DESIGNATION	DESCRIPTION
C1,C2	4.7 mf 25v rd. tant.
C3,C4	22 mf 6v " "
C5,C6	470mf 6v ax. elect.
C7-C10	.1 mf 50v ax. cr.
CP1	220mf 25v ax. elect.
CP2,CP3	.1 mf 50v ax. cr.
R1,R2	2.7KΩ 1/4w 5% CRBN.
R3,R4	27Ω " " "
R5-R8	1Ω 1/2w " "
U1,U2	MB3730
J1	3 PIN STRT. KK156 4 " " "
J2	3 " " " 2 " " "
HSA1,2	HEATSINK ASSY.
MH1-MH4	HEYCO BUSHING

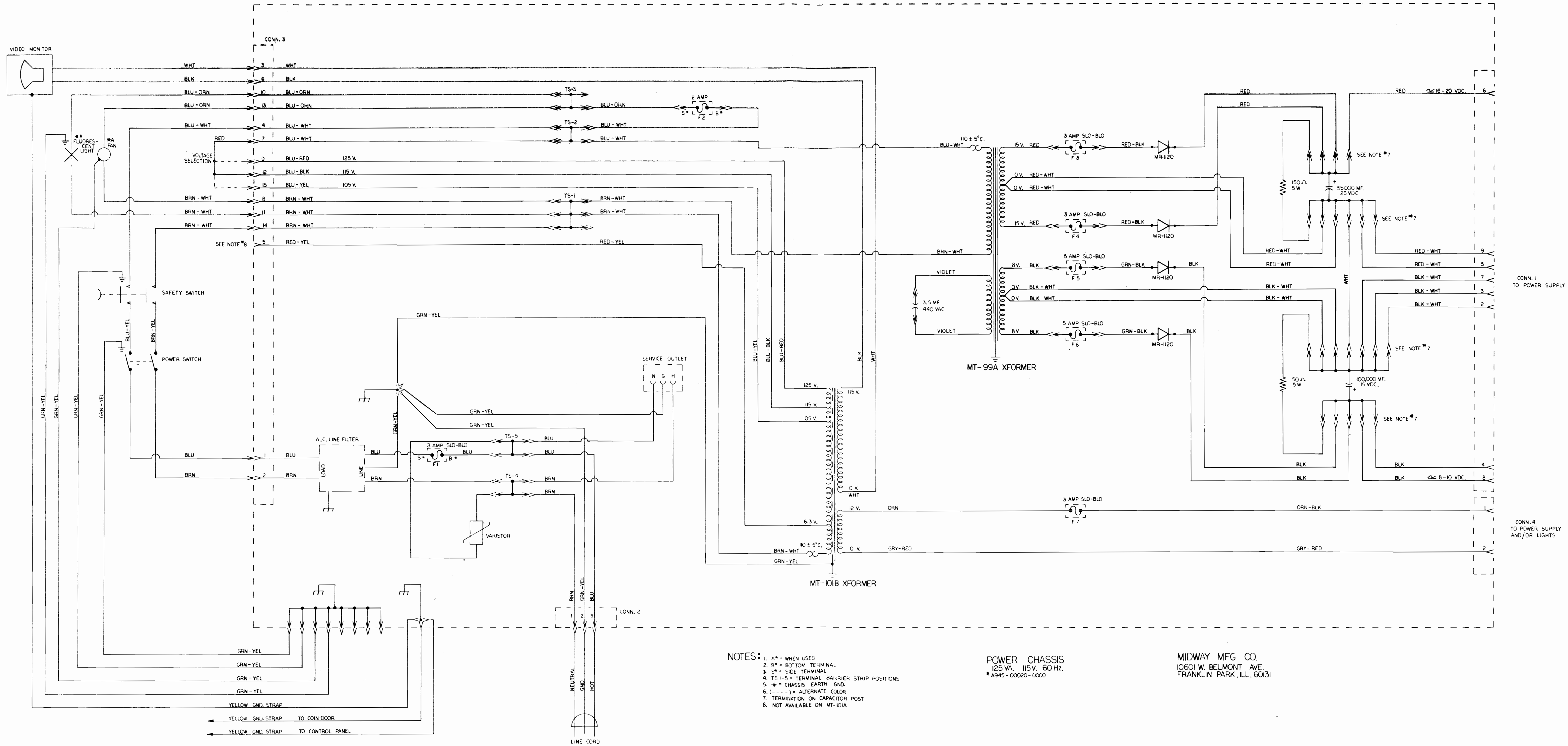


CROSS REFERENCE LIST

DESCRIPTION	QTY	DESIGNATION	PART NO.
.1mf 50v ax. cr.	6	C7-C10, CP2, CP3	0986-00800-1100
4.7 mf 25v rd. tant.	2	C1,C2	0986-00800-3100
22 mf 6v " "	2	C3,C4	0986-00800-1600
220mf 25v ax. elec.	1	CP1	0986-00800-3200
470mf 6v " "	2	C5,C6	0986-00800-1700
1Ω 1/2w 5%	4	R5-R8	0062-026D3-1XXX
27Ω 1/4w "	2	R3,R4	0062-068B3-1XXX
2.7K " "	2	R1, R2	0062-199B3-1XXX
MB3730	2	U1,U2	0066-188XX-XX4X
2 PIN STRT. KK156	1	J2	3000-16367-0200
3 " " "	2	J1,J2	3000-16367-0300
4 " " "	1	J1	3000-16367-0400
HEATSINK ASSY.	2	HSA1, HSA2	A986-00010-E000
HEYCO BUSHING	4	MH1-MH4	0017-00042-0014
PC BOARD	1		A080-90910-E000

PROJECT ENG. C. MEDNICK

DIM. TOLERANCES UNLESS OTHERWISE SPEC. CONCENTRICITY T.I.R. .002 FRACTIONAL ± 1/64 DECIMAL ± .005 HOLE DIA. + .002 – .000 ANGLE ± 1/2° **DO NOT SCALE DWG**	FIRST USED ON: TRON DRN: TJK DATE: 9-1-82 SCALE: FULL MECH CHK: MAT'L: ELEC CHK: C.M.M. FINISH:	**MIDWAY MFG. CO.** FRANKLIN PK., IL. 60131 A BALLY CO. DUAL PWR. AMP. ASSY A080-90910-E000	**REVISIONS** PART NO. M051-00986-E010



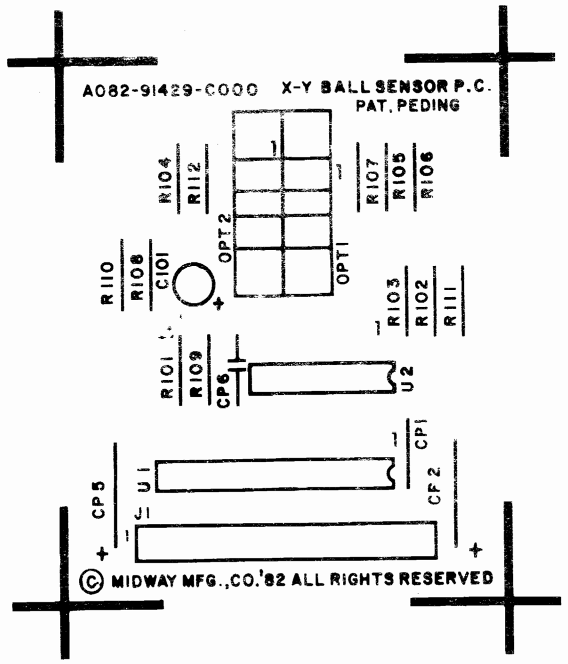
NOTES:
1. A* = WHEN USED
2. B* = BOTTOM TERMINAL
3. S* = SIDE TERMINAL
4. TS 1-5 = TERMINAL BARRIER STRIP POSITIONS
5. ⏚ = CHASSIS EARTH GND.
6. (- - - -) = ALTERNATE COLOR
7. TERMINATION ON CAPACITOR POST
8. NOT AVAILABLE ON MT-101A

POWER CHASSIS
125 VA. 115 V. 60 Hz.
* A945-00020-0000

MIDWAY MFG. CO.
10601 W. BELMONT AVE.
FRANKLIN PARK, ILL. 60131

DESIGNATION LIST

DESIGNATION NO.	DESCRIPTION
C 101	4.7 µf TANT 16 V RAD.
CP 1	.01 µf 50V AX. CER.
CP 2	10 µf 16 V AX. ELECT.
CP 5	10 µf 16V AX. ELECT.
CP 6	.01 µf 50V AX. CER.
R 101	4.7 K 1/4 W 5%
R 102	4.7 K " "
R 103	200 K " "
R 104	200K " "
R 105	6.2 K " "
R 106	120 ohm " "
R 107	30 K " "
R 108	91 K " "
R 109	200 K " "
R 110	200 K " "
R 111	4.7 K " "
R 112	6.2 K " "
OPT 1, OPT 2	OPTICAL SENSORS
U 1	74 LS491
U2	LM 339
J1	15 PIN KK-100 RT. ANGLE PIN 13 OMITTED
SCREW	5-40 X 6 SLT RND MS NY NT
PLATE	PLATE - NUT FIN.
A080-91429-C000	P.C. BOARD



CROSS REFERENCE LIST

DESCRIPTION	Q'TY	DESIGNATION NO.	PART NO.
.01 µf 50V AX. CER.	2	CP1, CP6	0628-00800-0100
4.7 µf 16V RAD. TANT.	1	C 101	0628-00800 0200
10 µf 16V AX. ELECT.	2	CP2, CP5	0628-00800-0300
120 ohm 1/4 W 5%	1	R 106	0062-116 B3-1XXX
4.7 K " "	3	R 101, R102, R111	0062-211B3-1XXX
6.2 K " "	2	R 105, R112	0062-217B3-1XXX
30 K " "	1	R107	0062-249B3-1XXX
91 K " "	1	R108	0062-273B3-1XXX
200 K " "	4	R103, R104, R109, R110	0062-289B3-1XXX
74 LS491	1	U 1	0628-00803-2700
LM 339	1	U 2	0628-00803-2900
OPTICAL SENSORS	2	OPT 1, OPT 2	0639-00804-0001
15 PIN KK-100 RT. ANGLE PIN 13 OMITTED	1	J 1	3000-16366-1502
SCREW	4	—	0017-00101-0084
PLATE-NUT	2	—	0643-00112-0080
P.C BOARD	1	—	A080-91429-C000

REVISIONS

PROJECT ENG: J. BOYDSTON

USED ON WACKO

NO. REQ'D 1 PER

Bally / MIDWAY MFG. CO.
FRANKLIN PK. ILL.

DO NOT SCALE DWG.

HEAT TREAT

SCALE FULL

DIM. TOLERANCES UNLESS SPECIFIED
CONCENTRICITY T.I.R. .003
FRACTIONAL ± 1/64
DECIMAL ± .005
HOLE DIA + .002 - .000

DRN. TBE.

CKD.

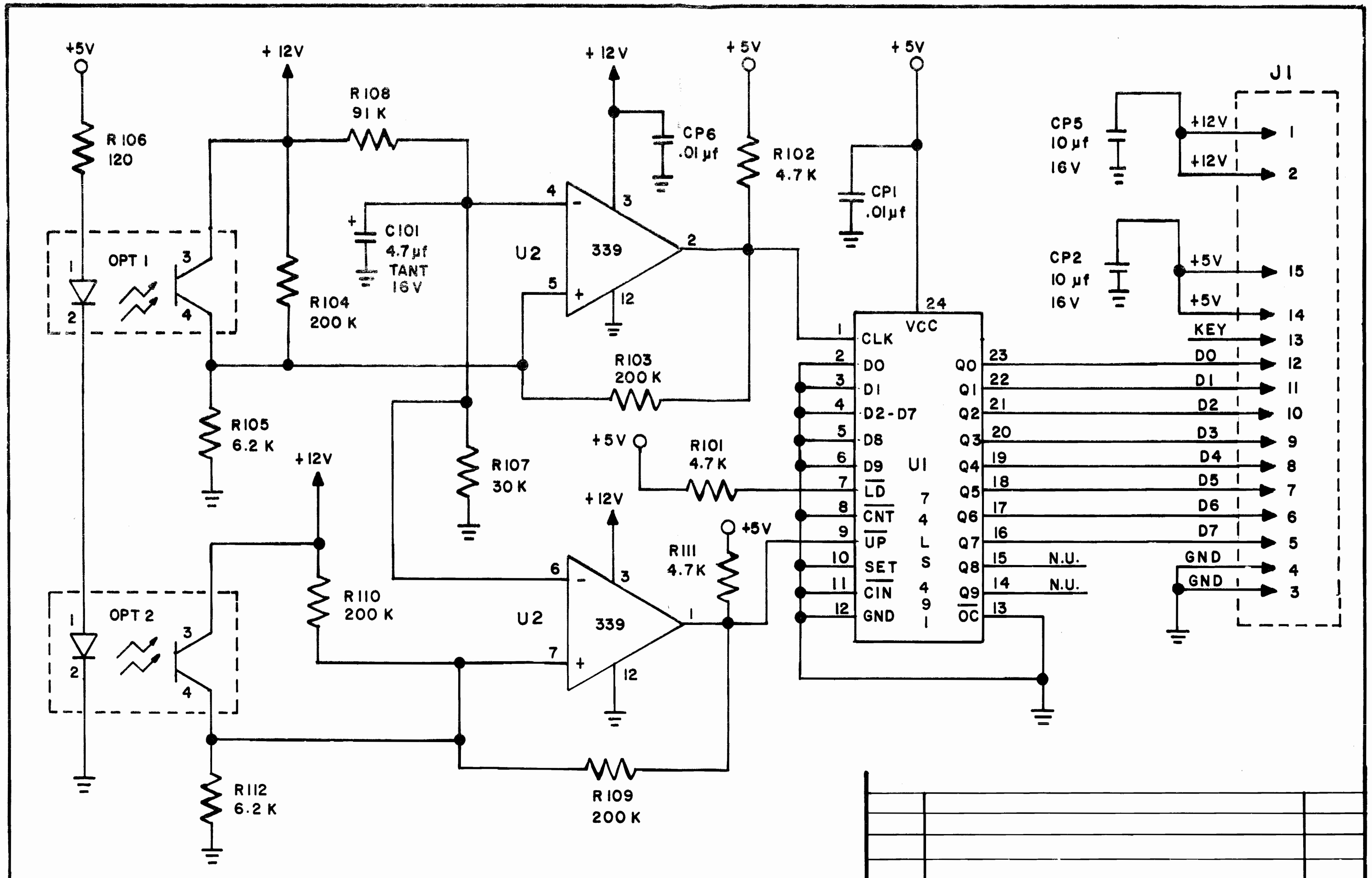
DATE 02/8/83

MAT'L.

FINISH

ASSEMBLY DWG
X-Y BALL SENSOR
A082-91429-C000

PART NO. M051 - 00114 - C010



REVISIONS

PROJECT ENG: J. BOYDSTON		USED ON WACKO	Bally / MIDWAY MFG. CO. FRANKLIN PK. ILL.
DO NOT SCALE DWG.	HEAT TREAT	SCALE FULL	NO. REQ'D 1 PER
DIM. TOLERANCES UNLESS SPECIFIED: CONCENTRICITY T.I.R. .003; FRACTIONAL ± 1/64; DECIMAL ± .005; HOLE DIA + .002 − .000	DRN. TBB / CKD. / DATE 02/8/83	MAT'L. / FINISH	SCHEMATIC DWG X-Y BALL SENSOR P.C. A082-91429-C000	PART NO. M051 - 00114 - C011

WACKO

OPTION SWITCH SETTINGS

SWITCH NO. 1 — AT B3 — LOCATED ON SOUND I/O P.C. BOARD

DURING GAME PLAY:	SW#1	SW#2	SW#3	SW#4	SW#5	SW#6	SW#7	SW#8	SW#9	SW#10
	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED		NOT USED	NOT USED	
UPRIGHT/MINI							**ON**			
COCKTAIL TABLE							**OFF**			
FREEZE VIDEO										**ON**
**NORMAL OPERATION										**OFF**

SWITCH NO. 3 — AT D14 — LOCATED ON SOUND I/O P.C. BOARD

	SW#1	SW#2	SW#3	SW#4
**NORMAL OPERATION	**OFF**			
SOUND I/O DIAGNOSTIC MODE	**ON**			
**NORMAL OPERATION		**OFF**		
RAM/ROM TEST INDICATES TEST RESULTS VIA YELLOW LED ON SOUND I/O BOARD: **FAST FLASH = BAD ROM** **SLOW FLASH = BAD RAM**		**ON**		
**NORMAL OPERATION			**OFF**	
OSCILLATOR TEST			**ON**	
**NORMAL OPERATION				**OFF**
FILTER TEST				**ON**

* NO EFFECT IF SW#1 OF SWITCH NO. 3 IS IN THE "OFF" POSITION.
** FACTORY RECOMMENDED SETTINGS.

PART NO.
M051-00337-A007

THE REMAINDER OF YOUR NEW GAME'S MOST COMMON OPTION SETTINGS ARE CONDUCTED DURING THE **MACHINE SETUP** PORTION OF THE SELF-TEST MODE AND WILL BE COVERED IN DETAIL IN THAT SECTION OF YOUR MANUAL.